# Persian Gulf Review

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## Secretary Brown Praises Congress for Passage of Persian Gulf Legislation

Secretary of Veterans Affairs Jesse Brown praised Congress for passing H.R. 5244, the "Veterans' Benefits Improvements Act of 1994,' legislation giving the Department of Veterans Affairs (VA) authority to award compensation benefits to chronically disabled Persian Gulf War veterans with undiagnosed illnesses, President Clinton signed the legislation into law on November 2, 1994. It is now known as Public Law 103-446.

Secretary Jesse Brown

The Administration had strongly endorsed the legislation, and Secretary Brown had sent letters in July to all 535 members of Congress urging quick action on the bill.

The legislation has four principal purposes: (1) to provide compensation to Persian Gulf War veterans who suffer disabilities resulting from illnesses that cannot be diagnosed or defined, and for which other causes cannot be identified; (2) to require VA to develop at the earliest possible date assessment strategies and definitions or diagnoses of such illnesses; (3) to promote greater outreach to Persian Gulf War veterans and their families to inform them of ongoing research activities, as well as the services and benefits to which they are currently entitled; and (4) to ensure that research activities and accompanying surveys of Persian Gulf War veterans are appropriately funded and undertaken by VA.

The law authorizes VA to pay compensation to any Persian Gulf veteran suffering from a chronic disability resulting from an undiagnosed illness that became manifest during Persian Gulf service or within a specific period of time following Gulf service. The law requires that the time period is to be specified by the Secretary of Veterans Affairs. Secretary Brown promised that he will move as quickly as possible to issue regulations. Even before final passage of the legislation, Secretary Brown established a task force to develop new regulations to implement this program, Secretary Brown also said that VA will contact each veteran on VA's Persian Gulf Registry, established in 1992 to identify any patterns of illnesses among Gulf veterans, and reopen benefits claims that were previously denied.

## VA Establishes Persian Gulf Research Centers

On July 29, 1994, Secretary of Veterans Affairs Jesse Brown announced the creation of three environmental hazards research centers designed with an initial focus on the possible health effects of environmental exposures of Persian Gulf veterans. The centers are located at Department of Veterans Affairs (VA) medical centers in Boston, Massachusetts; East Orange, New Jersey; and Portland, Oregon.

While making the announcement Secretary Brown declared, "The Nation owes Persian Gulf veterans a commitment to research aimed at answers and improved medical care both for well-known illnesses and for conditions where our understanding is still emerging, such as multiple chemical sensitivity or chronic fatigue syndrome.

"Right now, we have more questions than answers for some veterans who, even after referrals to specialists, are suffering with unexplained symptoms. We want Persian Gulf veterans to know that VA is there for them with access to an examination program and tracking system, and priority medical care for conditions possibly related to their exposure to toxic substances. We have established three referral centers for difficult-to-diagnose cases and are working to change compensation laws to assist veterans whose illness defies diagnosis. We also want all Persian Gulf veterans and their families to know that our commitment to research will be unwavering until we have those answers," he added.

The new centers are funded for five years with a total annual budget of approximately $1.5 million and an additional $300,000 for equipment costs in the first year of operation.

Each center has a research director to coordinate studies, which in some cases may involve affiliated institutions, as well as a medical director to assure continuity in the management of patient care.

A total of 14 individual projects are scheduled, each coordinated by a senior investigator. The centers plan a variety of interdisciplinary projects, including some aimed at developing a case definition for an unexplained illness and clarification of risk factors.

As results become known, the investigators will report their findings through papers and scientific publications, and all three centers will undergo a mid-cycle reevaluation after 2 1/2 years.

The centers are part of a broad VA medical research program involving some 1,900 research projects in support of VA's patient care mission through advancement of knowledge in all areas of medicine from basic science to health services research, with a heavy emphasis on studies in humans.

In January 1994, VA issued a call for researchers nationwide to develop new strategies for investigating Persian Gulf veterans' health, with the intention of funding up to three centers, each having a collection of integrated study protocols, VA decided to fund three centers from 19 proposals submitted and reviewed by an outside panel of experts. The successful centers met a high level of research excellence judged in the peer review process, and the research directors at all three centers have university faculty appointments. Each center has detailed plans for specialized core laboratories that will be used to strengthen the overall center's research.

The establishment of the new centers supplements several VA Persian Gulf health research projects already in progress, In addition, the Persian Gulf Veterans Coordinating Board, consisting of the Departments of Veterans Affairs, Defense, and Health and Human Services, was formed in January 1994, to resolve the health concerns of Persian Gulf veterans. The three departments are overseeing more than 30 Persian Gulf-related studies.

The National Academy of Sciences has been awarded a contract, jointly funded by VA and the Department of Defense, to review the health effects of Persian Gulf service and make recommendations regarding epidemiological research. The National Institutes of Health drew together an independent panel of experts in April 1994 to examine the Persian Gulf experience and make recommendations to the interagency board.

## Environmental Hazards Research Center Projects Described

The three Environmental Hazards Research Centers provide for the conduct of research in the broad area of health consequences to veterans of exposure to potential environmental hazards during active military duty. Each center approaches the medical problems reported by Persian Gulf War veterans from a different perspective. The approaches used by each of the three centers are intended to complement the efforts of the other centers. This article briefly describes the principal investigations that will be undertaken at each center.

### Boston Center

The Boston Environmental Hazards Research Center will conduct six Persian Gulf-related research projects aimed at determining health effects of environmental exposure to hazardous situations, with a particular emphasis on behavioral toxicology, immunotoxicology, cancer epidemiology, and behavioral psychopathology. The interdisciplinary work will extend current research at the Boston VA Medical Center that includes assessment of health, psychological well-being and neuropsychological function. Data shared among projects will allow investigators to examine such hypotheses as whether performance on psychological tests could be related to immune function and relating pulmonary test results with health symptom complaints.

One project will expand an examination of the relationship between health factors and Gulf exposures to explore multiple chemical sensitivity, chronic fatigue syndrome, organic brain syndromes resulting from toxicant exposures, post-traumatic stress disorder, somatization disorders, and the experience of a syndrome of multiple health complaints.

Other studies will investigate central and peripheral nervous systems in a group of veterans with environmentally related disorders while another will assess pulmonary and immune system function in the sam'e group of veterans. Other approaches at the Boston Environmental Hazards Center will seek validation of tests, a rodent study of immunologic changes thought to be related to petroleum products, and a registry of cancer incidence in Persian Gulf veterans.

### East Orange Center

The New Jersey Environmental Hazards Research Center at the East Orange VA Medical Center plans four projects to gather information about illnesses in Gulf veterans for development of the most characteristic symptom profiles.

Under the planned projects, an epidemiological study will compare two groups of Gulf veterans to collect and organize symptoms to define illness and, through the case--control method, identify risk factors. It will compare 1,500 veterans listed on VA's Persian Gulf Registry with 1,000 Gulf veterans who have not previously participated in VA's special health examination program. Study subjects divided into three groups -- chronic fatigue, chemical sensitivity and asymptomatic -- will participate in a series of studies in such areas as viral, immunological, neuropsychological and autonomic neural function.

One project will examine chemical sensitivity through physiologic and cognitive reactivity to chemical challenges delivered nasally and also passed through the skin. Those fulfilling chronic fatigue criteria will be tested to determine physiological and cognitive reactivity to exercise. An animal study will evaluate psychosomatic interactions.

### Portland Center

The VA Medical Center, Portland, Oregon, in conjunction with Oregon Health Sciences University's Center for Research on Occupational and Environmental Toxicology, is sponsoring an Environmental Hazards Research Center to examine health effects associated with exposure to selected environmental chemical hazards and biological hazards related to military service through four projects.

The center will identify exposures through intensive interviews and study risk factors for unexplained illnesses through an epidemiological study. The center also will screen veterans for medical, chemical and biological markers of exposure and disease and act as a repository for data collection and analysis.

Scientists from the VA medical center and university research center will work together to explore, both in patients and at the molecular level, key scientific issues involving epidemiology, neurobehavior, neuroendocrinology, neurotoxicology, dermatology and parasitology. They hope to define more accurately relationships between illness in Gulf veterans and post-traumatic stress disorder, or specific environmental, infectious or warfare chemical exposures. They plan to estimate future risk of developing symptoms in the population of exposed veterans and to begin devising appropriate treatments or interventions.

## About the "Review"...

The "Persian Gulf Review" is prepared by VA's Environmental Agents Service (EAS). The "Review" is published to provide information about the concerns of Persian Gulf veterans, their families, and others interested in the possible long-term health implications of exposure to various potential environmental hazards during military service during the Persian Gulf conflict. The "Review" describes actions by VA and others to respond to these concerns.

The most recent issue of the newsletter was printed in September 1994. Additional issues will be prepared when warranted by significant developments. EAS anticipates publication quarterly. This issue of the "Review" was written in late October/early November 1994 and does not include developments that occurred after that time.

Comments or questions about the content of the "Review" are encouraged. Suggestions and ideas for future issues of the newsletter should be sent to Donald J. Rosenblum, Writer/Editor, Persian Gulf Review, Environmental Agents Service (103A), VA Central Office, 810 Vermont Avenue, NW, Washington, DC 20420. Requests for additional copies of this issue, should also be directed to Mr. Rosenblum. A limited supply of the February 1993, September 1993, and September 1994, issues is also available. Please specify the number of copies requested and the issue date. VA facilities should order additional copies from the VA Forms Depot.

Persian Gulf Registry examinations are offered to all Persian Gulf theater veterans who apply for these examinations. Questions about the Persian Gulf Registry examination program should be directed to the Environmental Physician or Persian Gulf Coordinator at the nearest VA medical center. Questions regarding VA benefit programs, including disability compensation, should be referred to a veterans benefits counselor at the nearest VA facility. The telephone numbers can be found in the telephone directory under the "U.S. Government" listings.

## Clinical Evaluation Projects Explore Concerns about Depleted Uranium, Chemical Weapons, Birth Defects

Several VA investigations are examining hypotheses of specific potential risks and comparing study subjects with controls who did not serve in the Gulf to determine differences in health patterns.

### Depleted Uranium

In recent years, the U.S Armed Forces have used depleted uranium (DU) in the manufacture of projectiles and armor. It has physical properties that make it superior to lead as a penetrating projectile. American planes and ground vehicles in the Persian Gulf were armed with DU munitions.

The uranium used is "depleted" in the sense that it is the residual of an extraction process that selectively concentrates U-235 and leaves behind U-238. Naturally occurring uranium deposits contain over 99 percent U-238, with small amounts of U-235 and U-234. To create fissionable material, the small amount of U-235 present in natural uranium must be extracted and concentrated. Depleted uranium is the natural uranium left over from this process and contains even less U-234 and U-235 than the ores. In the projectiles and armor, depleted uranium is alloyed with small amounts of molybdenum and titanium.

American troops in the Persian Gulf were exposed to DU in several ways. A few were injured by "friendly fire;" more were crewmembers in relatively close contact with munitions in tanks or other vehicles; some wore amulets made with DU munitions. U.S. soldiers may have been exposed to smoke or particulates containing DU while fighting a fire at Doha Depot or entering vehicles or bunkers hit by DU projectiles. A few personnel have retained DU shrapnel fragments.

Physicians at the VA Medical Center, Baltimore, along with the University of Maryland, and the EPA Environmental Monitoring Lab in Nevada are monitoring the health of Persian Gulf veterans who have these fragments. The multi year effort is designed to evaluate possible long-term health consequences of DU exposure.

### Chemical Weapons

While the Department of Defense has not found conclusive evidence of the use of chemical weapons in the Persian Gulf, VA has heard reports from many veterans about the possibility that such weapons were used. A review of scientific literature has shown that people may experience long-term neurologic problems after exposure to certain chemical warfare agents. A specialized neurological examination protocol was developed at the Birmingham, Ala., VA Medical Center, to determine if Persian Gulf veterans are experiencing neurological effects.

The initial examination for this pilot program focuses on members of reserve units in Alabama and Georgia presenting possible neurological conditions, individuals who have participated in the Persian Gulf Registry at the Birmingham

facility, and local veterans reporting to that facility with symptoms of concern. The pilot program includes an extensive battery of neurological tests aimed at detecting the kind of dysfunction that would be expected after exposure to certain chemical weapons. Unfortunately, such testing cannot confirm whether the individuals were exposed to any particular agent. The specialized examination can detect the types of disabilities which could result from exposure and perhaps provide clues about the cause of such problems.

### Birth Defects

In response to reports of increased rates of birth defects, "rare illnesses," and excessive health problems among children born to Mississippi National Guard members after service in the Persian Gulf War, the VA Medical Center in Jackson, Mississippi, conducted an investigation incollaboration with the Mississippi State Health Department and the Centers for Disease Control and Prevention.

The study involved a review of the medical records of children born to veterans of the two National Guard units after return from military service in Southwest Asia. The observed medical problems in these children were compared to the expected rates of birth defects and other health problems. The expected rates of birth defects were obtained from other U.S. birth defect surveillance systems, that is the Metropolitan Atlanta Congenital Defects Program, and previous surveys such as the Collaborative Perinatal Project.

Of the 282 veterans who had served in the two units in the Persian Gulf, 254 (90%) were located and interviewed. Preliminary results show that 55 children had been conceived and born to 52 veterans after Persian Gulf service. Medical records were obtained and reviewed on 54 of the children. The observed number of both major and minor birth defects in the study population did not differ from expected.

This study did not identify any overall excess number of birth defects. However, because of the small numbers of children included in the study, the investigators were unable to definitively determine whether the observed number of specific birth defects identified among this group was greater than expected in the general population.

The numbers of children in the study group who were born prematurely and/or with low birth weight was similar to that in the U.S. population. No stillbirths or neonatal deaths had occurred. This small descriptive study does not identify an increased rate of major or minor birth defects or an increased risk of prematurity among the study group. A more formal case--control study with a larger number of subjects is required to determine possible risk factors for birth defects or other adverse birth outcomes among children born to military personnel.

## DoD Persian Gulf Telephone Hotline A Clarification

The September 1994 issue of the "Persian Gulf Review" included an article about the Department of Defense (DOD) "hotline" for Persian Gulf veterans. The DoD national toll-free number (1-800-796-9699) is primarily a referral service designed to help military personnel and veterans with health concerns related to their service in the Persian Gulf.

Individuals with questions about the VA disability compensation program should contact the nearest VA regional office. The toll-free telephone number for information and assistance regarding disability compensation and other VA benefit programs is 1-800-827-1000. VA is establishing a new toll-free telephone number specifically for Persian Gulf veterans and their families. Details regarding this "Persian Gulf War Veterans Help Line" will be included in the next issue of the "Review."

## Persian Gulf Veterans Coordinating Board Responds to NIH Workshop

An interagency council that reviewed recommendations for investigating the health of troops serving in the Persian Gulf War has reported a multi-faceted response in federal medical programs and research.

In reviewing those recommendations, the Persian Gulf Veterans Coordinating Board affirmed the administration's commitment to a thorough investigation of health complaints of veterans of the Gulf War, with a special emphasis on a subgroup with unexplained illnesses after Persian Gulf service.

The description of federal activities -- including a new health survey and improved uniformity in case assessment -- responded to an April report by outside experts convened for a National Institutes of Health (NIH) technology assessment workshop. The panel recommended directions for research as well as techniques for clinical assessment of ill military members and veterans. (The September 1994 issue of the "Persian Gulf Review" contains an article about the NIH workshop and its recommendations.)

Coordinating Board entities, the Departments of Defense, Veterans Affairs, and Health and Human Services, already are supporting more than 30 programs to learn more about the long-term health consequences of military service in the Gulf, and the Board's Research Coordinating Council agreed that additional research is needed.

The Board's statement on the NIH workshop recommendations describes interagency collaboration in a large Navy epidemiological study which, including control cases, will survey 1.2 million servicemembers' records for information on hospitalization and birth defects. It also will include special physiological testing of 2,250 Navy Seabees.

VA researchers will focus on Gulf veterans' health and risk factors through three newly established environmental hazards research centers. In response to an NIH workshop recommendation for a short health questionnaire to develop more accurate data on symptom prevalence, VA also is working with the other agencies to launch a mail survey of a random sample of 15,000 veterans and active duty members to compare symptoms and health status with an equal-sized group not deployed to the Gulf. A health examination will be offered to a representative sample to help validate participants' self-reported health status.

In addition, the Centers for Disease Control and Prevention (CDC) of the Department of Health and Human Services will be conducting a telephone survey of Iowa residents to compare the health status of some 2,000 veterans who served in the Persian Gulf with that of 2,000 veterans who served during the Gulf War but were deployed elsewhere. VA is working closely with CDC on this study.

The Board agreed with recommendations for a uniform case assessment protocol, which has been developed and implemented since the workshop report was issued. This "Comprehensive Clinical Evaluation Protocol" is designed for patients whose diagnosis is not readily apparent after routine medical assessment. It is being used jointly by VA and the Department of Defense.

This new Comprehensive Clinical Evaluation Protocol also specifically addresses screening for viscerotropic leishmaniasis, a serious form of the parasitic disease that has been detected in less than three dozen servicemembers and veterans. The departments are recommending attending physicians consider the disease in examining the patients and, if it is suspected, consult with infectious disease specialists to determine, on a case-by-case basis, whether a test requiring a bone marrow biopsy is appropriate. The Department of Defense also is continuing its work as a world leader in developing less invasive, experimental viscerotropic leishmaniasis tests that may provide for board screening use in the future.

Additional initiatives outlined by the Board are:

- The Department of Defense is preparing a request for proposals for a study that will examine chemical effects and an ill-defined condition known as multiple chemical sensitivity syndrome.
- As suggested by the workshop panel, studies have considered, and will continue to examine, the role of stress from deployment and post-traumatic stress disorder, with a goal of developing intervention strategies.
- The Department of Defense has formed a work group to review policies for routine future health surveillance for troops involved in overseas deployment.

## President Signs Legislation Extending Authority for Priority Treatment

On November 2, 1994, President Clinton signed Public Law 103-452, the "Veterans Health Programs Extension Act of 1994," which, among other things, extended, through December 31, 1995, VA's authority to furnish inpatient and outpatient care to veterans for medical conditions possibly related to exposure to toxic substances or environmental hazards during active duty service in the Southwest Asia theater of operations during the Persian Gulf War.

This authority was established by Public Law 103-210, signed by President Clinton on December 20, 1993. Prior to enactment of Public Law 103-210, Persian Gulf War veterans who claimed exposure to toxic substances and/or environmental hazards did not have the priority for VA medical services accorded to veterans who receive services for conditions possibly related to exposure to Agent Orange or ionizing radiation. Public Law 103-210 equalized the entitlement. The Agent Orange/radiation priority care authority was established in 1981 by Public Law 97-72, and has been extended by several subsequent laws, including Public Law 103-452. The new law extended the expiration date of the Persian Gulf priority care authority by one year.

Public Law 103-210 gave VA authority to waive the copayment requirement for Persian Gulf veterans under certain circumstances. VA can treat, without charge, a Persian Gulf veteran for any condition that the treating physician medically determines is possibly related to that veteran's Persian Gulf service. This medical opinion is documented in the veteran's medical record by the treating physician. Other Persian Gulf veterans with nonservice connected conditions who are treated for conditions medically determined to be unrelated to their exposure to a toxic substance or environmental hazard will be charged the appropriate copayment.

Public Law 102-585, enacted in November 1992, authorized establishment of the VA's Persian Gulf War Veterans Health Registry. Specifically, that law authorized VA to provide, without charge, a comprehensive medical examination which includes any diagnostic testing the examining physician finds is medically necessary to evaluate the veteran's current health situation as well as counseling regarding the findings of the examination.

## Concerns Raised About Pyridostigmine Bromide

Some Persian Gulf veterans have expressed concern about the possible long term health consequences of pyridostigmine bromide (PB) which was issued to nearly all U.S. troops in the Persian Gulf as a nerve agent pretreatment drug.

PB has been approved by the Food and Drug Administration (FDA) as a treatment for patients who have myasthenia gravis, a neuromuscular disease. It has been effectively used for this purpose for over forty years. Myasthenia gravis patients are known to take PB for many years in doses which are many times higher than those administered to troops without long term adverse health effects.

During Operation Desert Shield/Storm (ODS), sufficient safety data in humans and effectiveness data in animals was presented to the FDA for them to concur in the use of pyridostigmine as a pretreatment for nerve agent poisoning; a waiver of informed consent was granted.

ODS military personnel were provided with packets containing twenty-one, thirty milligrams PG tablets to be self administered orally. The recommended dose of PB is one tablet every three hours to be initiated and stopped by the direction of the commanding officer. Other coalition troops also used PB as a pretreatment for nerve agents. Although it is not known how much PB was taken by individual servicemembers, it is likely that most members took at least one but not more than twenty-one tablets.

Common side effects of PB include nausea, vomiting, abdominal cramps, diarrhea, increased salivation, sweating, and

muscle cramps. These effects appear within a short time after ingesting the PB tablet and reverse with discontinuation of the medication.

Two expert panels (the National Institutes of Health technology assessment workshop and the Defense Science Board) made up of non-scientists reviewed the use, safety, metabolism and toxicity of PB by troops in the Gulf War. Both groups concluded that the current scientific studies suggest that PB is an unlikely cause of the unexplained illnesses of Persian Gulf veterans.

The Army submitted a partial new drug application to the FDA in March 1994. A complete chemistry and manufacturing section was not available because of a change in the manufacturer of the drug. The Army is continuing to coordinate with the FDA on the review of the completed sections, including the safety and effectiveness data in that submission. The Army is also coordinating with the manufacturer in compiling the additional information needed by the FDA. The Army expects the full application to be submitted to FDA in February 1995.

## VA Registry Examination Total Tops 34,000; Preliminary Data Updated, Analyzed

More than 34,000 veterans have completed the Department of Veterans Affairs (VA) Persian Gulf Registry medical examination designed to help individuals who served on active military duty in Southwest Asia during the Persian Gulf War between August 2, 1990, and the termination date of the War (date not yet established).

This registry was designed to assist VA in identifying possible adverse health conditions which may have resulted from active duty service of U.S. military personnel in certain areas. This includes service in one or more of the following areas: (1) Iraq, (2) Kuwait, (3) Saudi Arabia, (4) the neutral zone (between Iraq and Saudi Arabia), (5) Bahrain, (6) Qatar, (7) the United Arab Emirates, (8) Oman, (9) the Gulf of Aden and Oman, and (10) the waters of the Persian Gulf, Arabia Sea, and Red Sea.

Adverse health conditions may be due to diseases endemic to the area or to other factors such as pollutants from the Kuwaiti oil fires, for example, carbon monoxide, sulfur oxides, hydrocarbons, particulate matter, and nitrogen oxides, These factors, singly or in combination, may cause chronic as well as acute health problems, and include, but are not limited to the following conditions: (1) chronic bronchitis, (2) chronic obstructive pulmonary disease, (3) pulmonary emphysema, (4) bronchial asthma, and (5) lung cancer.

In addition to the possible adverse health effects of exposure to oil, smoke, and other petrochemical agents, Persian Gulf veterans may report a wide variety of other exposures as a result of Persian Gulf service. These include, but are not limited to, such exposures or diseases as: (1) sand flies, (2) microwaves, (3) depleted uranium, (4) inoculations, (5) contaminated food and drink obtained in the Persian Gulf, (6) pyridostigmine bromide for prophylaxis against nerve agents, and (8) fumes from diesel fuel in tent heaters.

Symptoms include, but are not limited to, the following: (1) fatigue, (2) skin rash, (3) muscle/joint pains, (4) headache, (5) shortness of breath, (6) sleep disturbance, (7) gastro-intestinal problems, and (8) cough.

All eligible Persian Gulf veterans, with or without health complaints, are encouraged to participate in the voluntary registry examination program offered at every VA medical center. A complete medical history, physical examination, and interview are performed and documented in the veteran's medical record. Persian Gulf veterans who wish to participate in this program should contact the nearest VA medical center for an appointment.

### Diagnostic Focus

Physicians who perform the examination pay particular attention to the following diagnoses which may be associated with Persian Gulf service: (1) chronic laryngotracheitis, (2) other and unspecified diseases of the upper respiratory tract, (3) bronchopneumonia, organism unspecified, (4) chronic bronchitis, (5) emphysema, (6) asthma, (7) bronchiectasis, (8) chronic airway obstruction, not elsewhere classified, (9) pneumoconiosis due to other silica or silicates, (lo) pneumoconiosis, unspecified, (11) chronic respiratory conditions due to fumes and vapors, (12) respiratory conditions due to unspecified external agent, (13) unspecified chronic respiratory disease, (14) typhoid fever, also carrier - V02.1, (15) amoebiasis, (16) giardiasis, (17) tuberculosis, (18) brucellosis, (19) sandfly fever (phlebotomus fever), (20) viral hepatitis, (21) Brill's disease (recrudescent typhus), (22) malaria, (23) leishmaniasis, (24) schistosomiasis (bilharziasis), and (25) toxoplasmosis.

In gathering medical data, the examiner determines and records: (1) the time of onset of the symptoms or conditions, (2) the intensity, (3) the degree of physical incapacitation, and (4) the details of any treatment received.

Each veteran is given the following baseline laboratory studies: (1) chest x-ray (if one has not been done within the past six months, (2) complete blood count, (3) SMA-6, SMA-12, or equivalent blood chemistries and enzymes studies, and (4) urinalysis. If a diagnosis is not readily apparent after a routine medical evaluation, VA medical facilities follow the "Comprehensive Clinical Evaluation Protocol" developed for use in the VA Persian Gulf Referral Centers and adapted for use by both VA and the Department of Defense for those who served in the Persian Gulf. This focused protocol was transmitted to all VA medical centers in June 1994.
The results of the examination are included in the veteran's consolidated health record.

The Environmental Physician (or designee), responsible for the clinical management of the registry at the medical center, discusses with each veteran the results of his or her physical examination, completed diagnostic studies, and laboratory results which are available when the physical examination is complete. The interview is conducted in such a way as to encourage the veteran to discuss any health concerns, as well as concerns expressed by family members. This discussion and the follow-up letter, sent to each veteran to

further describe the veteran's condition, are also documented in the veteran's permanent health record,

The results of each veteran's examination are also summarized on a code sheet and combined with records of other veterans at the VA's Austin Automation Center to help researchers to get useful data about the problems experienced by Persian Gulf veterans.

## Sensitivity to Needs of Women Veterans

VA physicians are aware of and sensitive to the needs of women Persian Gulf veterans who were (1) raped, (2) otherwise sexually assaulted, (3) sexually harassed, or (4) combatants during military service. Such experiences can lead to long-term psychiatric and psychosomatic difficulties, When such problems are detected, appropriate counseling and psychotherapy is provided.

## Referral Center Program

Recognizing that some Persian Gulf veterans were presenting symptoms that defied explanation through the usual diagnostic and therapeutic endeavors of a local VA medical center, in August 1992, VA established three Persian Gulf Referral Centers to provide further assistance to these veterans,

VA determined that to help these veterans it was desirable to provide for inpatient stays to allow for observation, multidisciplinary consultations, and lengthy occupational and exposure history with an opportunity to re-examine them. For such veterans, the local VA medical centers make arrangements for the transfer to one of the referral centers. The average length of stay at a referral center is about two weeks,

The referral centers are located at the VA medical centers in West Los Angeles, Houston, and Washington, DC. These locations were selected based on availability of clinical and academic expertise in such areas as pulmonary and infectious diseases, immunology, neurology and access to occupational medicine expertise.

The majority of the veterans who have reported to their local VA medical center have been successfully diagnosed there. The decision to send a veteran to a referral center is made by the local medical center physician in consultation with a referral center physician director,

The number of veterans requiring transfer to a referral center has been relatively small. Approximately one hundred fifty of the more than 34,000 Persian Gulf veterans who have completed the registry examinations have been admitted to a referral center. Individuals who feel that they may benefit from a referral center evaluation should contact their local VA physician.

## Data Analyzed

The September 1994 issue of the "Persian Gulf Review" described the results of a review of data on the first 12,774 veterans who received Persian Gulf Registry conducted by a team of scientists in VA's Environmental Epidemiology Service (EES). The EES team has updated the review with data from examinations of an additional 4,474 veterans, bringing the total to 17,248. The results are similar to the earlier analysis.

The most frequent complaints among the 17,248 registry participants were fatigue (17.4 percent), skin rash (16.8 percent), headache (14.1 percent), muscle and joint pain (13.9 percent), and loss of memory (10.5 percent). Fifteen point five percent expressed no specific complaints. Overall complaints and several selected complaints (example, skin rash, fatigue, memory loss) were more frequent among veterans who served in reserve and guard units.

Despite much higher participation rates and a significantly greater proportion of individuals with complaints among veterans who served in the reserve or guard units, EES investigators reported that there seemed to be no significant variation by unit status in occurrence of major categories of medical problems or any specific medical conditions. Similarly, distribution of the same categories of medical conditions by branch of service did not vary substantially.

In comparison to another self-selected veterans group, Vietnam veterans who participated in the Agent Orange Registry (age 35-39 at time of examination), Persian Gulf veterans (age 35-39 at time of examination) reported more fatigue, muscle and joint pain, headache, sleep disturbances, and shortness of breath but less skin rash. Gulf War veterans (in this age grouping) were diagnosed more frequently with chronic bronchitis, asthma, gastroenteritis, and arthralgia but less frequently with neurotic disorder, alcohol and drug dependency, post traumatic stress disorder, and depressive disorder (compared with Vietnam veterans in the same age grouping).

Fifty-one cases of cancer were reported among the 17,248 veterans in the Persian Gulf registry. Skin cancer was the most common type of cancer identified. Birth defects were reported by 569 (3.3 percent) of the 17,248 veterans. About 1.5 percent reported birth defects in children conceived before their Persian Gulf service, 1.6 percent reported birth defects in children conceived after Gulf service, and 0.2 percent indicated that they have children with birth defects conceived both before and after their Gulf service.

The EES team also compared medical data (specifically, discharge diagnoses) from 9,984 Persian Gulf theater of operations veterans who received inpatient care at VA facilities with 8,885 Persian Gulf era veterans who did not serve in the theater of operations and who have been treated as an inpatient at a VA facility. These Persian Gulf theater veterans suffered with more mental disorders and digestive system problems but less nervous system, circulatory system, and musculoskeletal disorders than their non-theater counterparts.

## Data Limitations

EES researchers urged caution in analyzing and describing the information in the registry. They noted that the individuals in the registry are a self-selected group of veterans who are concerned about the possible adverse health effects of service in the Gulf area and who were willing to come to VA facilities for medical examinations. They added that a majority of troops who served in the War were still in service with active units and would not yet be seeking medical attention from VA.

The registry participants may not be representative of either the troops deployed in the Gulf area overall or of those eligible for medical care from VA. It is unclear whether certain symptoms and diseases in the registry participant population are under-represented or over-represented.

In spite of its limitations, the registry serves as a useful tool in suggesting areas for further in-depth reviews and study. The registry can provide an opportunity to identify possible adverse health trends on which to base the design and conduct of valid epidemiologic studies.

The inpatient data have similar limitations. Many veterans obtain necessary inpatient services from non-VA sources. It is unclear whether those treated in VA facilities are representative of all veterans.

## Must File a Claim to be Considered for Compensation

Persian Gulf veterans who believe they have health problems that may be related to their military service who have not filed a claim for disability compensation from VA are encouraged to contact the nearest VA regional office. The VA's nationwide toll-free telephone number is 1-800-827-1000. Veterans who participate in the Persian Gulf Registry examination program must file a disability claim to be considered for compensation. The programs are separate.

## Where to Get Help

*Active duty military personnel with questions or concerns about their service in the Persian Gulf region* - contact your commanding officer or call **1-800-796-9699**

*Persian Gulf veterans with concerns about their health* - contact the nearest VA medical center. The telephone number can be found in the local telephone directory under Department of Veterans Affairs in the "U.S. Government" listings. A Persian Gulf Registry examination will be offered. Treatment will be provided to eligible veterans.

*Persian Gulf veterans in need of marital/family counseling* - contact the nearest VA medical center or VA vet center.

*Persian Gulf veterans seeking disability compensation for illnesses incurred or aggravated military service* - contact a veterans benefits counselor at the nearest VA regional office or health care facility.

*Persian Gulf veterans interested in learning about tile wide range of benefit programs administered by VA* - contact a veterans benefits counselor at the nearest VA regional office or health care facility, or call **1-800-827-1000**.

*Note:* Representative of veterans service organizations, including the American Legion, Veterans of Foreign Wars of the United States, Disabled American Veterans, etc., may also be very helpful to Persian Gulf veterans.

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***Information for Veterans Who Served in Desert Shield/Storm***

**January 1995**

**Department of Veterans Affairs**
**Automation Center (200/397)**
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