



Gulf War Review

Vol.10, No. 1 Information for Veterans Who Served in Desert Shield/Storm November 2001

House Passes Veterans Benefits Act of 2001; Includes Gulf War Provisions

On July 31, 2001, the U.S. House of Representatives passed a bill (H.R. 2540), the "Veterans Benefits Act of 2001" by a vote of 422-0.

The legislation includes three compensation provisions directed at Gulf War veterans. One would expand the definition of Gulf War "undiagnosed illnesses" to include "fibromyalgia, chronic fatigue syndrome, chronic multi-symptom illness, or any other illness that cannot be clearly defined (or combination of illnesses that cannot be clearly defined.)"

In this legislation, 13 signs or symptoms are identified as manifestations of an undiagnosed illness. They are (1) fatigue, (2) unexplained rashes or other dermatological signs or symptoms, (3) headache, (4) muscle pain, (5) joint pain, (6) neurologic signs or symptoms, (7) neuropsychological signs and symptoms, (8) signs or symptoms involving the respiratory system (upper or lower), (9) sleep disturbances, (10) gastrointestinal signs or symptoms, (11) cardiovascular signs or symptoms, (12) abnormal weight loss, and (13) menstrual disorders. The Department of Veterans Affairs (VA) does not support this provision because it is too vague, and because earlier legislation already covers Gulf War veterans with illnesses that defy diagnosis.

The legislation also would authorize VA to provide for the preservation of service connection for undiagnosed illnesses to provide for participation in research projects by Gulf War veterans. In other words, the proposal would protect a veteran's compensation for undiagnosed illness from information

obtained through their participation in VA-sponsored research on any illness. This is intended to broaden participation in vital scientific and medical studies. VA supports the concept upon which this is based.

The bill also would extend to December 31, 2003, the presumption period (the time during which a condition is presumed to be associated with military service) for providing disability compensation to veterans with undiagnosed illnesses. This authority expires at the end of this year. VA supports this extension. (See article on pages 5-6 regarding VA testimony on similar legislation).

The bill was sent to the Senate where it was referred to its Committee on Veterans' Affairs. If the Senate passes a different version, the differences must be resolved before the bill can go to the President for his action.

VA Gulf War Mortality Update Study Published; Good News for Gulf War Veterans

A seven-year follow-up of death rates for Gulf War veterans carried out by VA scientists concluded that overall, both Gulf War veterans and non-Gulf War veterans are healthier than their counterparts in the general U.S. population.

Researchers in the Department of Veterans Affairs' Environmental Epidemiology Service compared mortality rates of 621,902 Gulf War veterans with those of 746,248 veterans who served in the military during the Gulf War but served outside the Gulf War Theater of Operations to assess the long-term health consequences of the 1991 Gulf War. The researchers looked at the causes of death con-



sidering gender, age, race, marital status, branch of service, and type of unit. They also evaluated mortality risk based on the likelihood of exposure to nerve gas in Khamisiyah, Iraq. (For related stories about Khamisiyah, see “Gulf War Review” issues dated January 2001 and June 1997).

Among Gulf War veterans, the significant excess of deaths due to motor vehicle accidents that was observed during the earlier post-Gulf War studies decreased steadily to levels found in veterans that served during the Gulf War but not in the Theater of Operations. Furthermore, the risk of death from natural causes was lower among Gulf War veterans compared with the control group. The researchers attribute that finding to the relatively higher number of deaths related to human immunodeficiency virus (HIV) infection among the non-Gulf War veterans.

There was no statistical difference in mortality between Gulf War veterans and controls relative to potential nerve gas exposure at Khamisiyah.

In earlier studies, over the entire follow-up period, Gulf War veterans, both female and male, were at higher risk of death from accidents, especially motor vehicle accidents. However, during the recent follow-up period (beginning in May 1996 -- six years after the end of the War -- through December 1997), the risk of death due to motor vehicle accidents has fallen to the same as the non-Gulf War veterans. This is consistent with a mortality study of Vietnam veterans in which excess deaths due to motor vehicle accidents was seen only in the first five years after Vietnam service. That study found that after the fifth year of follow-up, mortality due to motor vehicle accidents decreased to levels found in non-Vietnam veterans.

Overall, the risk of death for both Gulf War veterans and for non-Gulf War veterans was less than half of that in their civilian counterparts.

The study results were published in the *American Journal of Epidemiology* in September 2001. (See *Am J Epidemiol* 2001;154(5):399-405). Reprint requests can be directed to Dr. Han K. Kang, Environmental Epidemiology Service,

Department of Veterans Affairs, 1120 20th Street, N.W., Suite 950, Washington, DC 20036. Dr. Kang and Tim A. Bullman conducted the study. The supply is small.

Results of VA Study on Birth Defects in Children of Gulf War Veterans Released

In October 2001, an article by a team of VA researchers concluded that the risk of veterans *reporting* birth defects was significantly higher among veterans with military service in the Gulf War than among non-Gulf War veterans. The authors cautioned that this observation needed to be confirmed by a review of medical records to rule out possible reporting bias.

The article, entitled “Pregnancy Outcomes Among U.S. Gulf War Veterans: A Population-Based Survey of 30,000 Veterans,” appeared in the October 2001 issue of *Annals of Epidemiology*. (See *Ann Epidemiol* 2001;11:504-511). These results do **not** demonstrate that Gulf War veterans are at higher risk for bearing children with birth defects, but they clearly show the importance of further study to better understand this issue.

The findings are part of a much larger VA study of Gulf War veterans' health called the “National Health Survey of Gulf War Era Veterans and their Families.” VA began this study in 1994 to thoroughly evaluate the health status of all U.S. Gulf War veterans. For this comprehensive study, VA mailed questionnaires to a random sample of 15,000 Gulf War veterans and an equal number of non-deployed U.S. service members. Dr. Han K. Kang, Director, VA's Environmental Epidemiology Service, is the principal investigator for the study.

Reproductive health was just one of the illness categories examined in the VA National Health Survey. As with all the symptoms and many other illnesses asked about in the survey, Gulf War veterans were more likely to report birth defects among their children compared to non-deployed veterans. Self-reported birth defects are always difficult to interpret regardless of the source, and must be double-checked with a review of medical records. One

problem is that non-experts without medical training may confuse other health problems in children with true birth defects. Earlier follow-up studies of self-reported increases in birth defects in children of Vietnam veterans found that birth defect rates were actually normal.

Several earlier studies of birth defects in children of Gulf War veterans, done before the VA birth defects study, did not demonstrate Gulf War veterans are at higher risk of bearing children with birth defects. Just after the Gulf War, veterans from two Mississippi National Guard units became concerned about an apparent cluster of birth defects among their children. But follow-up studies of objective hospital records found that birth defects in these children were actually not different from those found in other state birth defects surveillance programs.

Similarly, a 1988 survey by the Centers for Disease Control and Prevention (CDC) of Vietnam veterans found those veterans also reported more health problems than non-Vietnam veterans, including more birth defects. However, subsequent review of hospital records found that rate of birth defects to be indistinguishable between the two groups.

VA scientists are presently taking the steps needed to evaluate the birth defects reported by Gulf War veterans with a thorough review of medical records. VA will make the results from this review available as soon as possible.

Earlier Results from the National Health Survey

Initial results of the National Health Survey were published in May 2000: "Illnesses among U.S. veterans of the Gulf War: A population-based survey of 30,000 veterans" in the *Journal of Occupational and Environmental Medicine*. (See *J Occup Environ Med* 2000;42:491-501). Compared to non-Gulf War veterans, Gulf War veterans reported greater rates for every one of the 48 symptoms appearing on the questionnaire.

The 10 most commonly reported symptoms in the study were back pain, runny nose, joint pain,

About the "Review"

The "Gulf War Review" is written by VA's Environmental Agents Service (EAS). The "Review" is published to provide information about the concerns of Gulf War veterans, their families, and others interested in possible long-term health consequences of military service in the Gulf War. The "Review" describes actions by VA and others to respond to these concerns. For past and current issues of the "Review" and additional information, see our web site at www.va.gov/health/envIRON/persgulf.htm.

The most recent, prior to this, issues of the newsletter are dated May 2001 and August 2001. Additional issues will be prepared when warranted by significant developments. EAS anticipates publication of the "Review" three or four times annually. Three were issued in Calendar Year 2000. This is the fourth issue of 2001. This issue was completed in late September 2001 and does not include developments that occurred after that time.

Comments or questions concerning the content of the "Review" are encouraged. Suggestions and ideas for future issues of the newsletter should be sent to Donald J. Rosenblum, Deputy Director, Environmental Agents Service (131), VA Central Office, 810 Vermont Avenue, N.W., Washington, DC 20420; email d.j.rosen@hq.med.va.gov

Requests for additional copies of this and/or future issues should also be sent to Mr. Rosenblum. A limited supply of the prior issues is available. Please specify the quantity and issue date requested.

Questions about the Registry examination should be directed to the Registry Coordinator or Registry Physician at the nearest VA medical facility. The telephone number can be found in the local telephone directory under the "U.S. Government" listings. Assistance is also available from the toll-free VA Gulf War Helpline: **1-800-749-8387**.

headaches, being anxious, difficulty in getting to sleep, feeling tired, skin rash, excessive fatigue, and heart burn or indigestion. Non-deployed veterans also reported all these symptoms, but at lower rates.

Gulf War veterans also reported many different chronic medical conditions significantly more often compared to non-deployed veterans. Reported conditions were not limited to any single organ system. The five top illnesses were sinusitis, gastritis, dermatitis, arthritis, and frequent diarrhea. Gulf War veterans also report greater rates of chronic fatigue, symptoms of post-traumatic stress disorder (PTSD), and higher rates of functional impairment.

VA Studying Women Veterans Who Have PTSD

Many women are traumatized while serving in the military. A recent study of female veterans estimated that 60% had experienced at least one traumatic event during military service. The prevalence of serious trauma appears especially high among veterans who have served since Vietnam, who now constitute the majority of female veterans. Most often, military trauma in women involves sexual assault or rape, but other sources are physical assault, accidents, disasters, and even war-zone exposure, including medical assignments that involve exposure to seriously injured personnel.

Women also experience trauma before and after entering military service. In fact, the prevalence of sexual assault during childhood and adolescence appears to be higher in military than in the general U.S. population.

Traumatic exposure can have profound effects on a person's well-being and functioning, and may lead to the development of Post-Traumatic Stress Disorder (PTSD). PTSD occurs not only in combat veterans but also in other survivors of traumatic events such as natural disasters and interpersonal or sexual violence. Among civilian adults in the U.S., the lifetime prevalence of PTSD is 5% in men and 10% in women.

A new research project, sponsored by the Department of Veterans Affairs (VA) Cooperative Studies Program, and the Department of Defense, is designed to address the needs of female veterans and active duty personnel who have PTSD. The new VA study, identified as **VA Cooperative Study # 494: A Randomized Clinical Trial of Cognitive-Behavioral Therapy for Women**, also will test the helpfulness of exposure therapy for female veterans and active duty personnel with PTSD.

PTSD Common Among Women Veterans

PTSD is a prevalent condition among women who have military service experience. A recent population sample of active duty Navy and Marine Corps personnel found that among women, 17.4% had PTSD sometime in their lifetime, and 8.3% had current PTSD. The VA National Vietnam Veterans Readjustment Study reported in 1988, that 26% of women who served in Vietnam had PTSD at some point since their service, and 8.5% had PTSD at the time of assessment. Current PTSD prevalence in women who served in the Gulf War is 8-10%. Prevalence is substantially higher among women who seek VA treatment for stress-related problems: one study found that 50% of these women had PTSD.

PTSD is associated with a range of comorbid (occurring at the same time) conditions and functional difficulties, including other anxiety disorders, depression, substance abuse, psychosocial impairment, poor physical health, and greater service utilization. Thus, PTSD has far-reaching effects on many aspects of military and veteran women's lives.

A variety of drugs and psychotherapies are used for treating PTSD. Among the psychotherapies, cognitive-behavioral therapy appears to be the most promising approach. One useful cognitive-behavioral technique is "exposure," in which a patient is guided through a vivid remembering of a traumatic event repeatedly until the patient's emotional response decreases through habituation.

Volunteers Sought for Study

The study will enroll 384 women, who will be randomly assigned to receive either exposure therapy or therapy that focuses on current life problems. Both treatment will last 10 weeks, and the women will be followed for 6 months after the end of treatment to evaluate how PTSD and other symptoms respond to treatment.

The study is a collaboration between VA and the Department of Defense. Co-Chairs of the project are Paula P. Schnurr, Ph.D., and Matthew J. Friedman, M.D., Ph.D., from the VA's National Center for PTSD, and LTC Charles C. Engel, M.D., from Walter Reed Army Medical Center in Washington, DC. The VA National Center for PTSD is located at the Veterans Affairs Medical Center in White River Junction, VT. Dr. Friedman is the Executive Director, and Dr. Schnurr is the Deputy Director. The biostatistician is Ken James, Ph.D., and the study is coordinated by VA personnel in Palo Alto, CA.

Women will be enrolled at 11 VA sites around the country: Albuquerque, Atlanta, Baltimore, Bay Pines/Tampa, Boston, Cincinnati, Cleveland, Dallas, Denver, New Orleans, and Portland. There also will be a Department of Defense site in Washington, DC. Women who are interested in participating in the trial may contact the project at csp494@nimbus.dartmouth.edu for referral to participating medical centers.

The above article was prepared and submitted by Dr. Schnurr, identified above, especially for the "Review."

Deputy Secretary Mackay on Gulf War Legislation

On June 28, 2001, Deputy Secretary of Veterans Affairs Leo S. McKay, Jr., Ph.D., testified before the Senate Committee on Veterans' Affairs on several legislative items of great interest to veterans. The following is an excerpt from his prepared statement.

S. 409, or the "Persian Gulf War Illness Compensation Act of 2001," would modify provisions in 38 U.S.C. §§ 1117 and 1118 governing compensation for certain Gulf War veterans. We oppose the enactment of this bill.

Currently, 38 U.S.C. § 1117 provides that the Secretary of Veterans Affairs may pay compensation to any Gulf War veteran suffering from a chronic disability resulting from an undiagnosed illness (or combination of undiagnosed illnesses) that became manifest during active service in the Southwest Asia theater of operations during the Gulf War or became manifest to a compensable degree within a presumptive period (currently ending on December 31, 2001) as determined by regulation. Section 1118 of title 38 provides for the establishment of presumptive service connection for diagnosed and undiagnosed illnesses associated with Gulf War service.

Section 3(a) of the bill would establish a statutory presumptive period under 38 U.S.C. § 1117 extending to December 31, 2011. The Secretary of Veterans Affairs would be authorized to extend that date by regulation. Section 3(b) would amend 38 U.S.C. § 1117 by adding a new subsection to clarify that the term "undiagnosed illness" for purposes of presumption of service connection includes "poorly defined" illnesses such as fibromyalgia, chronic fatigue syndrome, autoimmune disorder, and multiple chemical sensitivity. Section 3(c) would amend 38 U.S.C. § 1118 to reflect the modification of the meaning of the term "undiagnosed illness."

In our view, the current provision of 38 U.S.C. § 1117(b) authorizing the Secretary to prescribe by regulation the presumptive period for undiagnosed illnesses associated with Gulf War service is appropriate and should be retained. The Secretary's determinations regarding the presumptive period are made following a review of any available credible medical or scientific evidence and the historical treatment afforded disabilities for which manifestation periods have been established and take into account other pertinent circumstances regarding the experiences of veterans of the Gulf War. We plan

to consider whether the current presumptive period should be extended administratively based on these factors.

With regard to fibromyalgia, chronic fatigue syndrome, and autoimmune disorder, as referenced in section 3(b) of this bill, under current law, service connection may be established on a direct basis for disability resulting from one of these conditions. However, although study of the health of Gulf War veterans is continuing, we are not aware of scientific or medical evidence supporting establishment of a presumption of service connection for any of these conditions based on Gulf War service. With regard to multiple chemical sensitivity, this condition is not recognized under VA's schedule for rating disabilities. Further, we are also not aware of scientific or medical evidence supporting creation of a presumption of service connection for this condition. Moreover, VA has adequate authority under existing law to establish presumptions for these conditions should scientific and medical evidence support such action. Accordingly, we do not support the inclusion of reference to these conditions in 38 U.S.C. §§ 1117 and 1118.

Leo S. Mackay, Jr., Ph.D., was confirmed by the Senate on May 24, 2001. As the VA's second in command, Dr. Mackay is the chief operating officer of the federal government's second largest department. Prior to his nomination, Mackay was Vice President of the Aircraft Services Business Unit at Bell Helicopter Textron, Inc., of Fort Worth, TX. A 1983 U.S. Naval Academy graduate, Dr. Mackay completed pilot training in 1985, graduating at the top of his class. His military honors include the Defense Meritorious Service Medal, the Navy Achievement Medal, and the Armed Forces Expeditionary Medal. He was a Kennedy Fellow at Harvard, earning a master's degree in public policy from the Kennedy School of Government and a doctorate in political and economic analysis from the Graduate School of Arts and Sciences. Leaving active duty military service in 1995, Dr. Mackay joined the corporate staff of Lockheed Martin, where he became Director of Market Development. He left Lockheed Martin in 1997 to join Bell Helicopter.

National Academy of Sciences “Gulf War Veterans Health Effects From Pesticides/Solvents Review” Advances; Report Expected in September 2002

The second in a series of the National Academy of Sciences' Institute of Medicine (IOM) reports, summarizing the peer-review science literature, appears to be on schedule for release in September 2002. This report will focus on pesticides and solvents that some Gulf War veterans were exposed to during their military service.

IOM's 400+ page initial report, entitled *Gulf War and Health, Volume 1 - Depleted Uranium, Pyridostigmine Bromide, Sarin, Vaccines*, was released on September 7, 2001. That report is described in detail in the October 2001 issue of the “Gulf War Review” newsletter. Also the report is available on-line at www.nap.edu.

These IOM reviews are required by Public Laws 105-368 and 105-277, both enacted in late 1998. The Department of Veterans Affairs provides funding for the IOM reviews. IOM is a highly prestigious scientific organization. It is part of the National Academy of Sciences and is not part of the government.

For additional information regarding the pesticide/solvents project or related reviews, write to Gulf War and Health, Institute of Medicine, 2101 Constitution Avenue, N.W., Washington, DC 20418. The email address is pghealth@nas.edu.

National Academy of Sciences Reports on “Treating Symptoms and Syndromes”

Martha Adell Cruz, a full-time communications / journalism student at Austin Community College in Austin, Texas, prepared the following article in August 2001, while serving as a Summer Intern through the Hispanic Association of Colleges and Universities (HACU) in VA's Environmental Agents Service. She plans to graduate in Spring 2002 and looks forward to a career in journalism.

On July 26, 2001, the National Academy of Sciences' Institute of Medicine (IOM) released a report entitled *Gulf War Veterans: Treating Symptoms and Syndromes*. An IOM-established committee, specifically created to fulfill the mandate of Section 105 of Public Law 105-368, the Veterans Programs Enhancement Act of 1998, was asked to identify a method of assessing treatment effectiveness and describe already validated treatments for Gulf War veterans' health problems, including the problem of medically unexplained symptoms. The report is an effort to come to a conclusion from what is known about other existing symptom-based diseases and apply it to the problems suffered by Gulf War veterans.

The report presents a comprehensive assessment of identifying health problems, treatment effectiveness, and condition-specific treatments. It examines approaches to the treatment of individuals with medically unexplained symptoms, which are quite common among Americans in general. The report also makes recommendations regarding areas in which research may improve our understanding of Gulf War veterans' illnesses. In this report, IOM attempts to project from what is known about treating patients in other circumstances whose experience symptoms similar to Gulf War veterans with unexplained symptoms and to apply that knowledge to the veteran population. The committee uses an approach to evaluating treatments that can be consistently applied across diagnoses.

Bernard M. Rosof, M.D., Senior Vice President, Clinical Affairs/Quality, North Shore Long Island Jewish Health System, Great Neck, NY, chaired the 10-member IOM committee, formally known as the "Committee on Identifying Effective Treatments for Gulf War Veterans' Health Problems." Members were chosen by IOM for their diverse perspectives and technical expertise. Dr. Rosof and Study Director Lyla Hernandez edited the publication. The committee gathered information about what is known about treating patients in other circumstances who experience symptoms similar to Gulf War veterans with unexplained symptoms and applied that knowledge to the veteran population.

The specific charge of the committee was to (1) identify and describe approaches for assessing treatment effectiveness; (2) identify illnesses and conditions among veterans of the Gulf War, using data obtained from VA and the Department of Defense (DoD) Gulf War registries, as well as information in published articles; and (3) for these identified conditions and illnesses, to identify authenticated models of treatment, or to identify new approaches, theories, or research on the management of patients with these conditions if validated treatment models are not available.

The committee examined the most commonly reported symptoms and grouped as follows (1) established and accepted symptom-based conditions, experienced by people in the general population who have recognized diagnoses of unknown causes/origins of a disease or abnormal condition; and (2) individuals who fall into no clear diagnostic category.

Conditions of unknown etiology (no known cause) include (1) Chronic Fatigue Syndrome (Fatigue, headache, cognitive dysfunction, and other symptoms); (2) Depression (fatigue, loss of memory, and other general symptoms, cognitive dysfunction and sleep disturbances); (3) Fibromyalgia (muscle pain, sleep disturbances, fatigue); and (4) Irritable Bowel Syndrome (diarrhea, constipation, abdominal pain, nausea, vomiting, and other gastrointestinal symptoms). Post-Traumatic Stress Disorder (PTSD) is included in this report because of its increased prevalence in veteran populations.

Two definitions were used to describe the different types of treatments for evaluating the value of a treatment, treatment *efficacy* and treatment effectiveness. Treatment efficacy means that the benefit produced by a given treatment in tightly controlled study conditions in which patients are carefully selected and may be more frequently observed, tested and monitored. Treatment *effectiveness* is defined as the benefit produced by a given treatment in day-to-day clinical practice, in unselected patient populations who do not receive extra tests, education, or visits because of participation in the study. Relatively few effectiveness

studies have been conducted because of the limited information available. Instead there are efficacy studies.

Recommendations

The committee offered numerous recommendations, including some for condition-specific treatments. Among other things, the committee recommended that VA (1) use a hierarchy of evidence structure that includes effectiveness studies as well as efficacy studies for any future treatment guidelines they develop for symptoms or illnesses of Gulf War veterans; (2) design future studies of treatment effectiveness that include outcomes research and effectiveness randomized clinical trials; and (3) develop a standard language for describing Gulf War veterans symptoms including severity and chronological patterns and that this standard language be used in conducting treatment effectiveness studies and developing treatment guidelines.

The committee also recommended that ongoing studies of veterans' health (the national VA study, Iowa follow-up on Gulf War veterans, and the Millenium Cohort Study being implemented in the DoD) include collection of data on treatments and health-related quality of life. The committee also recommended that current VA and DoD Gulf War registries be used as one way to identify patient samples and serve as a sampling frame for future treatment effectiveness studies.

While research into the consequences of war-related illnesses and deployment-related health effects proceeds, we are faced with the task of providing effective treatments to those who are suffering from difficult-to-diagnose, ill-defined, or unexplained illnesses. In fulfilling its charge and responding to a congressional mandate, this committee and its report focused on answering two questions: (1) Are there effective treatments for some of the difficult-to-diagnose, ill-defined, or unexplained health problems experienced by Gulf War veterans; and (2) In the future, what approach should be used to assess treatment effectiveness?

No randomized control trials have been conducted on treatments for medically unexplained symptoms, therefore, no specific treatment recommendations could be made. However, the committee explored current theories and research on treatment and has recommended a patient-centered approach to care that is appropriate for both those with medically unexplained symptoms and those who receive a diagnosis.

The IOM report noted that most Gulf War veterans have not experienced troubling and sometimes debilitating symptoms that some Gulf War veterans are suffering. The national health survey of Gulf War veterans and their family members is being conducted by VA. Some results are available from this large-scale effort, involving about 30,000 veterans. About 75 percent of the Gulf War veterans participating in the survey describe their health as "good to excellent," and the remaining 25 percent rated their health as "fair to poor." Ninety percent of non-Gulf War deployed veterans rated their health as "good to excellent" while 10 percent reported their health as "fair to poor."

Copies of this report are available for sale from the National Academy Press, 2102 Constitution Avenue, N.W., Box 285, Washington, DC 20055. The national toll-free telephone number is 1-800-634-6242. The telephone number for callers in the Washington metropolitan area is 202-334-3313. The full text of the report is available at www.nap.edu.

Gulf War Concerns in Other Countries - Part 3

The following article is the third in a three-part series that describes the concerns and reactions of the United Nations Coalition partners that joined the U.S. in the Gulf War. (Note: We initially planned to publish this information in two parts but its length resulted in a revision of that plan). The Gulf War Review, dated March 2001, provided an introduction to this subject and reported on early initiatives undertaken by the British, French, Czechs, Canadians, Danes, and Australians.

The second article, which appeared in the August 2001 issue, focused primarily on the British research effort. This issue includes additional information about the Canadian Gulf War Health Research Program, the Danish Gulf War Study, difficulties in making international comparisons, differences in exposures, future collaboration, and a concluding summary.

We are grateful for the input and substantial contribution of Col. John T. Graham. Dr. Graham served as the British Liaison Officer (Gulf Health) at the British Embassy in Washington, DC from 1998 to 2001. During his service in Washington, Dr. Graham shared office space in VA Central Office with the Persian Gulf Veterans Coordinating Board and its successor, the Military and Veterans Health Coordinating Board.

The Canadian Gulf Health Research Program

The Department of National Defense contracted with Goss Gilroy to conduct a study of the health status of Canadian Gulf War veterans. It was a postal questionnaire survey administered to all Canadian Gulf veterans and a comparison group of Canadian Forces personnel who served in other locations at the time of the Gulf War. The findings were also compared with civilian Canadian population comparison groups. The survey was carried out in 1997. Questionnaires were sent to approximately 10,000 individuals. The response rate for veterans was 73% and 60% for controls. The overall response rate was 64.5%.

This study found that veterans were more likely to have used health services recently. Veterans reported higher prevalences of a wide range of symptoms, as they have in other similar studies. They reported a higher prevalence of spontaneous abortions, but not of stillbirths. They reported a higher prevalence of birth defects, but this increase was found in babies conceived before, during and after the conflict. The patterns of ill-health reported by the veterans were the same in all parts of the force.

It is worth noting that the findings in naval service members were the same, whether or not they had taken pyridostigmine bromide. The crew

of HMS Protecteur had been changed halfway through the deployment. The first crew did not take pyridostigmine; their replacements did. Similarly, there were no differences detected in the patterns of ill-health described by Canadian medical personnel, who were immunized against anthrax, and others.

The Danish Gulf War Study

The Health Service of the Danish Defense Ministry commissioned a series of studies in 1996 to determine if the patterns of ill-health reported in American veterans were to be found in Danish veterans. Only 29 of over 800 study subjects had been in the Gulf during hostilities. The remainder had been deployed on humanitarian operations. During 1997, a cross-sectional (a “slice-in-time”) study was carried out comparing the health of veterans with an age/gender-matched group. Participants were invited to attend a clinic and complete a questionnaire. They were then interviewed by a physician who confirmed their responses.

The findings of the study were reported in three papers. In the first paper, the team found that veterans were more likely than controls to report a wide range of symptoms with onset during or after the Gulf War. However, they did not report more muscle and joint pain. The researchers concluded that the patterns of ill health in Danish veterans were similar to those being experienced by American veterans. As most Danish veterans were not deployed during hostilities, they concluded that the results indicated that there were risk factors acting that were independent of combat.

The second paper considered the etiology of gastrointestinal symptoms which were more prevalent in the veteran group than in controls. The team found that these symptoms were associated with burning fecal waste and pesticide use, and recommended that these symptoms might be reduced in future deployments by instituting appropriate preventive measures.

The third paper reported that an increased prevalence of neuropsychological symptoms in veterans was associated with psychosocial factors and

physical/chemical exposures. The authors recognized that the results were based on self-report but felt that the factors identified seemed plausible. They recommended that psychosocial factors, known to be important in civilian life, and also environmental factors, should be improved on deployments to minimize the risk of long-term neuropsychological symptoms.

Difficulties in Making International Comparisons

Different countries have used different cut-off dates for service in the Gulf as the qualifying criteria for inclusion in studies. The American and Canadian studies have defined the deployment period from 1 August 1990 to 31 July 1991; the British studies have used the period from 1 September 1990 to 30 June 1991. American and Canadian studies will include more veterans who were in theatre during the hottest parts of the year.

There are demographic differences between the populations of the US and UK. Health experience varies; for example, heart disease is common in Northern Ireland and Scotland. Recruiting patterns are different. The British Army recruits more heavily in Northern Ireland and Scotland and in areas of inner-city urban deprivation. British soldiers are not representative of the general population whereas Americans are more so.

We are beginning to understand that the post-conflict health experience of veterans may be related to their pre-deployment health status and their previous operational experience. The British people did not go through the trauma of Vietnam. British troops, however, have had a considerable amount of military operational experience in Northern Ireland. The UK researchers have found it difficult to find controls without operational experience.

Differences in healthcare systems will have an impact when we try to compare registry data. The Defense Medical Services in the UK do not provide healthcare for those who have left the Services. Retirees who develop serious or life-threatening conditions will go to the universally available

National Health Service for care. They will be unlikely to come to an assessment program run by the Ministry of Defense. Consequently, the patients seen in London are not representative of sick veterans or of the veterans population as a whole.

When we try to compare conditions that are prevalent in the veteran population, such as post traumatic stress disorder, there are further complications. Following the Vietnam War, the Readjustment Counseling Service was established in the United States to care for veterans outside the formal medical system. Over 80,000 Gulf veterans have been seen by the Readjustment Counseling Service; many of these will not be included in American registry data.

Differences in Exposures

There is an assumption that everyone in the Gulf had the same exposure to everything. Ground forces involved in the land battle will have had a different experience than naval personnel afloat. Those arriving early in Operation Desert Shield will have been exposed to heat; late reinforcements will have encountered cold, wet weather and been launched straight into operations. It is difficult to tease these differences out in a meaningful way to enable conclusions to be drawn about the etiology of Gulf veterans illnesses. There are some international differences, however, that may be more helpful.

The patterns of ill health described by Danish personnel mirror those reported by US, UK and Canadian troops. Yet, with the exception of 29 personnel who the field surgical team, the Danish troops were not Gulf veterans in the usual sense. They were in theatre after hostilities ceased on peace-enforcement or humanitarian operations. Their ill-health cannot be attributed to vaccines or pyridostigmine bromide.

The patterns of ill health reported by Canadian veterans are remarkably similar in all parts of the force. The sailors on HMS Protecteur were rotated as a group half-way through the campaign. Those who had been on board in the first group had the same health experience as their shipmates who

relieved them and were on HMS Protecteur during the period of hostilities. The latter group took pyridostigmine bromide (PB), the former did not.

Vaccines, and the interactions between them and PB, have been cited as a cause of Gulf veterans' illnesses. The only country to give anthrax, plague and pertussis vaccines widely was the UK yet the uptake for assessment programs has been lower than in the US. Canadian soldiers attached to the British Field Hospital were offered immunization with British vaccines, and many were immunized, yet there was no difference between their health experience and that of their naval compatriots.

Future Collaboration

Professor Cherry's paper on mortality in British Gulf veterans is soon to be published. It would be useful to compare how deaths are ascertained and if common definitions of classifications, such as suicide, are the same in different countries. The database that provides mortality data in the United Kingdom also provides information about cancer registrations. There are international initiatives to ensure that diagnoses are applied consistently and to identify differences. The relevance of these initiatives to international comparisons of veterans' health should be explored.

Some of the research teams in different countries used the same survey instruments in their studies. As the study subjects are characterized, it may be possible to make valid comparisons of morbidity and overcome some of the difficulties generated by different healthcare systems.

The United States intends to commission a longitudinal cohort study, the "Millenium study", to provide baseline information for other studies and a framework for future research programs. If other countries are to develop similar initiatives, it would be useful to do so in a coordinated way to promote comparability of data.

Summary

Veterans of the Gulf War in a number of countries have reported an excess of ill-health charac-

terized by fatigue, depressive symptoms, and cognitive impairment. The patterns of ill-health seen are similar to those experienced by veterans of other campaigns. They are equally prevalent in personnel from combat units, rear echelons, and naval parties. No single environmental, toxic or infectious cause can explain their cause. The pathogenesis is multifactorial and complex. Future research should describe the role of operational, environmental, psychological and other factors in the development of post-deployment ill health in veterans.

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Gulf War Publications Available in Spanish

Two Department of Veterans Affairs-produced Gulf War-related publications are now available in Spanish. Specifically, the eight-paneled “Gulf War Veterans' Illnesses: Questions & Answers” brochure, dated May 2001, identified as “IB-41,” and the four-page “A Report to Veterans - Department of Veterans Affairs - Gulf War Research,” dated May 2001, identified as “IB-42,” have been translated into Spanish and have been distributed to all VA medical centers, especially those serving large Hispanic populations.

The Questions and Answers brochure includes the following topics: Is there a Persian Gulf Syndrome or Gulf War Syndrome? What health problems are Gulf War veterans reporting? What is VA doing to help veterans of Desert Shield and Desert Storm? What is the Gulf War Registry examination program? How can a veteran participate? What happens to the information from the registry examination program? Can an ill Gulf War veteran get medical treatment at VA for his or her medical problems? Can spouses and children of Gulf War veterans get free medical examinations? What happens if a veteran has symptoms that cannot be diagnosed by doctors at the local VA medical center? How can a veteran get referred to one of these special centers? What research is doing on Gulf War veterans' health? And much more.

The research report describes what research VA and other federal departments are doing regarding Gulf War veterans' illnesses. It highlights the major research projects and the clinical and research results to date.

These publications have been translated into Spanish to enhance outreach to Hispanic veterans and especially to their families and others for whom Spanish is the first language. Ten thousand copies of each publication have been reproduced.

VA's Environmental Agents Service spearheaded the publication of the Spanish versions with substantial assistance from the VA's Center for

Minority Veterans, both are located in VA Central Office in Washington, DC.

In addition to field facilities and offices, copies are available from Donald J. Rosenblum (131), GW Publications, Spanish, VA Central Office, 810 Vermont Avenue, N.W., Washington, DC 20420. Please specify which publication sought and the quantity needed. These publications will soon be placed on the VA web page at <http://www.va.gov/health/envIRON.persgulf.htm>.

GW Review Readers' Survey and One Veteran's Experience

Martha Adell Cruz, our HACU Summer Intern, prepared the following article. Ms. Cruz identified a Gulf War veteran, with the initials RC, from Wisconsin as representative of the Readers' Survey respondents.

RC is one of the Gulf War veterans that responded to the “Gulf War Review” Readers' Survey. The survey is not a scientific study, but a compilation of all written responses to four questions about the “Review.” To date 83 surveys have been returned. Sixty-seven percent of those participants felt the “Review” has been very informative and has met their needs, while 7 percent felt the “Review” has not been informative.

“It's good knowing that our government has kept in contact with the veterans. The Gulf War Review has important information on health issues,” said RC, a Gulf War veteran from Wisconsin, who chooses to remain anonymous. RC was in the Army reserves during the Gulf War and was stationed near Hafir El Batin. He worked in an ammunition supply unit.

Fear of Unknown

Many survey participants, like RC, used the survey as a vehicle to express their thoughts about the war and share some of their experiences. “The fear of not knowing what to expect was always a prevalent thought for many Gulf War veterans,” RC

noted. “At the time, we constantly thought about the possibility of massive American casualties and the use of chemical weapons. Many of the Iraqi missiles were poorly made and nobody knew what was in them. We knew that any one of the incoming Scud missiles could have been filled with a chemical agent. It's the fact of not knowing that caused most of the concern for us during the war.”

To help calm the concerns of the use of chemical and biological warfare agents and protect our troops from the possible health effects of such agents, the government issued pyridostigmine bromide (PB) in pill form, and administered anthrax and botulinum toxoid vaccinations. Scanty records were kept of how many PB pills were used by each service member and how many units were given the shots. RC indicated that he only took one of the PB pills at the initial enemy Scud attack of the war, but many fellow unit members took half a dozen or more because they didn't know what to expect in a Scud missile attack and because they had no real direction on how many to take.

The rationale for providing vaccinations was that soldiers might be exposed to chemical or biological agents, and even though a small percentage of soldiers might experience side effects, it (the vaccinations) were for a greater good, the good of the service. RC reported that he only took the shot once the first time it was administered, and just signed in and left without taking follow-up shots. “Prior to the ground war starting, the thinking was that the shot would protect you. People were going blindly and trusting that it was for their own good. By the second and third series of shots, it seemed useless. For me, after seeing the after-effects experienced by some of the troops I worked with, I felt the risk of getting the shot was worse than not getting it,” he said.

Mixed Feelings

Some veterans feel that the government should be more forthcoming with information concerning health concerns of Gulf War veterans. “I have mixed feelings. During and right after a war I feel the government may have had a valid argument in

not letting out the entire story because of a very reasonable concern of national security. But after some time has passed, they should be more forthcoming about the possible use of chemical or biological agents by any and all sides,” said RC.

Since the war, some veterans returned home with unexplained illnesses; others had conditions that were easily diagnosed and treated; and others came back with no problems at all. There are many theories on how to cure these unexplained ailments and the origins of the illnesses.

“I believe in the theory of multiple toxicity. People came back from Operation Desert Storm susceptible, whether that was from nerve agents, biological toxins, or even exotic insects. It explains why some veterans of the war didn't know that something was wrong until they were exposed to a secondary trigger, such as 'ordinary' household or agricultural chemicals, possibly months or even years later,” said RC.

Toll-Free Number

VA has launched many initiatives to help Gulf War veteran. One is the national toll-free number (1-800-PGW-VETS or 1-800-749-8387) where veterans can call about their questions and concerns. VA encourages everyone to speak out on veterans' issues and to send in any suggestions on how VA can better serve Gulf War veterans, including how the “Review” might better serve their needs. Comments and suggestions regarding the “Review” should be sent to Mr. Donald J. Rosenblum, Deputy Director, Environmental Agents Service (131), ATTN: Gulf War Review, VA Central Office, 810 Vermont Avenue, N.W., Washington, DC 20420; email: d.j.rosen@hq.med.va.gov

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 the Department of Defense (DoD) Gulf War Veterans' Hotline (1-800-796-9699) for an examination.

Gulf War 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 Gulf War Registry examination will be offered. Treatment will be provided to eligible veterans. The VA Gulf War Information Helpline can also provide the latest information and assistance. The toll-free telephone number is 1-800-PGW-VETS (1-800-749-8387).

Gulf War veterans in need of **marital/family counseling** - contact the nearest VA medical center or VA vet center. For additional information, call the Gulf War Information Helpline at 1-800-PGW-VETS (1-800-749-8387).

Gulf War veterans seeking **disability compensation** for illnesses incurred in or aggravated by military service - contact a Veterans Benefits Counselor at the nearest VA regional office or health care facility at 1-800-827-1000, or call the VA Gulf War Information Helpline at 1-800-PGW-VETS (1-800-749-8387).

Gulf War veterans seeking participation for their **spouses or children** in the VA-funded health examination program for spouses and children - call the VA Gulf War Information Helpline at 1-800-PGW-VETS (1-800-749-8387). Veterans interested in the alternative self-funded examination for spouses or children - contact the Gulf War Registry Coordinator at the nearest VA medical center for forms and information.

Gulf War veterans interested in learning about the wide range of **benefit programs** administered by VA - contact a Veterans Benefits Counselor at

the nearest VA regional office or health care facility at 1-800-827-1000, or call the VA Gulf War Information Helpline at 1-800-PGW-VETS (1-800-749-8387).

DOD has changed its "**Incidents**" hotline to the "**Direct Veterans Hotline**" to more accurately reflect the work done by the Hotline's contract managers. The new toll-free number is 1-800-497-6261.

Veterans who have been diagnosed with a motor neuron disease (including **amyotrophic lateral sclerosis or Lou Gehrig's disease**) and who were on active duty between August 2, 1990, and July 31, 1991, regardless of whether they actually served in the Gulf War theater of operations (or family/friends of veterans who are deceased or otherwise unable to contact VA) - call 1-877-DIAL-ALS (1-877-342-5257) to participate in a national survey.

For additional information about VA's program initiatives, see VA's Gulf War **veterans' illnesses** home page at <http://www.va.gov/health/envIRON.persgulf.htm>

Gulf War veterans who **encounter difficulties** at a VA medical facility can contact the "**patient advocate**" at that facility for assistance in resolving the problem. The medical center telephone operator should have the telephone number.

Representatives of **veterans service organizations**, including the American Legion (1-800-433-3318), Veterans of Foreign Wars of the United States (1-800-VFW-1899), Disabled American Veterans (1-877-426-2838), etc., have been very helpful to Gulf War veterans, especially veterans who are seeking disability compensation.

Q's and A's

The "Review" occasionally includes a questions-and-answers section in which Department of Veterans Affairs (VA) officials respond to inquiries from readers regarding the Gulf War experience, problems experienced by Gulf War veterans and their families, and programs initiated by the VA and other federal departments and agencies to help these veterans and their families.

Questions should be sent to Mr. Donald J. Rosenblum, Deputy Director, Environmental Agents Service (131), Attn: Gulf War Review - Q's & A's, 810 Vermont Avenue, N.W., Washington, DC 20420; email d.j.rosen@hq.med.va.gov

Registry Statistics

Total Initial (1st Time) VA Gulf War Registry Examinations by Year

Year Ending	December 1994-28,505
	December 1995-23,054
	December 1996-4,920
	December 1997-8,248
	December 1998-7,578
	December 1999-5,392
	December 2000-3,117



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