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March 20, 2003

MEMORANDUM

To: Members of the Subcommittee on National Security,
Emerging Threats, and International Relations

From: Kristine K. McElroy

Subject: Briefing Memorandum for the hearing, *Protecting the Health of
Deployed Forces: Lessons Learned From the Persian Gulf
War*, scheduled for Tuesday, March 25, 2003, at 2 p.m. in
Room 2247, Rayburn House Office Building.

PURPOSE OF THE HEARING

The purpose of the hearing is to examine the deployment health lessons learned from the Persian Gulf War.

HEARING ISSUES

- 1. What deployment health lessons have been learned from the Persian Gulf War?**
- 2. What steps have been taken to apply the lessons learned to protect and monitor the health of deployed forces?**

BACKGROUND

Since the end of Operation Desert Shield/Storm in 1991, more than 125,000 U.S. veterans of the Gulf War have complained of illnesses. Typical complaints of Gulf War veterans are: flu-like symptoms, chronic fatigue, rashes, joint and muscle pain, headaches, memory loss, reproductive problems, depression, loss of concentration, and gastro-intestinal problems. Others suffer cancers, heart and lung problems, and amyotrophic lateral sclerosis (ALS) or Lou Gehrig's Disease.

Many believe they are suffering chronic disabling conditions as a result of wartime exposures to one or more of 33 toxic agents known to be present in the Gulf War theater of operations. Before, during and after the hostilities, U.S. troops were exposed to a variety of potentially hazardous substances. Potential exposures include chemical and biological warfare agents as well as pesticides, insect repellants, leaded diesel fuel, depleted uranium, oil well fires, infectious agents, the experimental drug pyridostigmine bromide (PB), and multiple vaccines including anthrax. However, a lack of data has made it difficult to establish causal links between exposures and subsequent illnesses.

According to a General Accounting Office (GAO) report, "Research efforts to determine the cause of Gulf War illnesses have been hampered due to incomplete medical surveillance data on 1) the names and location of personnel deployed to the Persian Gulf, 2) exposure of personnel to environmental health hazards 3) changes in the health status of personnel deployed in the theater, and 4) records of immunizations and other health services provided to the individuals while deployed." **(Web Resource 1)** As a result, GAO found, "the data available were poorly suited to support epidemiological and health outcome studies related to veterans' Gulf War illnesses." **(Web Resource 1)** Likewise, the Presidential Advisory Committee on Gulf War Veterans' Illnesses final report concluded many of the health questions veterans have may go unanswered due to a lack of data. **(Web Resource 2)**

Public Law 105-85, National Defense Authorization Act, 1998

Public Law 105-85 includes provisions for improving medical tracking systems for members deployed overseas in contingency or combat operations. The law requires the Secretary of Defense to establish a system to evaluate the medical condition of deployed servicemembers. Elements of the system must include predeployment and postdeployment medical examinations, an assessment of mental health and the drawing of blood samples. The law mandates medical records including immunizations be maintained in a centralized location. The Secretary of Defense is also required to submit to Congress a report containing a plan for collecting and maintaining information regarding the daily location of units of the Armed Forces, and to the extent practicable individual members of such units. However, it is not clear if the Department of Defense (DOD) has submitted this report to Congress. **(Attachment 1, pp. 1-2)**

Institute of Medicine

The Institute of Medicine (IOM) Committee on Strategies to Protect the Health of Deployed U.S. Forces was tasked with advising the DOD on a strategy to protect the health of deployed U.S. forces. The Committee used recommendations from four earlier reports on force health protection to come up with six strategies that need greater emphasis by DOD:

1. Use a systematic process to prospectively evaluate non-battle-related risks associated with the activities and settings of deployments.
2. Collect and manage environmental data and personnel location, biological samples, and activity data to facilitate analysis of deployment exposures and to support clinical care and public health activities.
3. Develop the risk assessment, risk management, and risk communication skills of military leaders at all levels.
4. Accelerate implementation of a health surveillance system that spans the service life cycle and that continues after separation from service.

5. Implement strategies to address medically unexplained symptoms in populations that have deployed.
6. Implement a joint computerized patient record and other automated record keeping that meets the information needs of those involved with individual care and military public health. (**Attachment 2, pp. 2-3**)

The Committee concluded, "immediate action must be taken to accelerate implementation of these plans to demonstrate the importance that should be placed on protecting the health and well-being of service members." (**Attachment 2, p. 2**)

Department of Defense Force Health Protection

The Department of Defense has applied lessons learned from the Persian Gulf War to develop the Force Health Protection (FHP) strategy. The Force Health Protection strategy focuses on maintaining a healthy and fit force, casualty prevention and casualty care. These goals are to be accomplished through the use of military medical surveillance, environmental monitoring, personal protection, and personnel monitoring. The FHP program is designed to track service members' disease and injuries and to provide follow-up treatment for deployment-related health conditions.

The Department of Defense plan to provide force health protection includes improving risk communication, medical intelligence, providing environmental risk assessments to commanders on the battlefield, giving medical threat briefings and distributing pocket-sized health guides to deployed personnel. The Defense Medical Surveillance System has created a database on diseases military personnel may be exposed to during their deployment. (**Attachment 3, p. 1**)

The DOD has also established three deployment health centers for health surveillance, health care, and health research. The centers focus on prevention, treatment and understanding of deployment health concerns. (**Attachment 4, p. 1**)

DISCUSSION OF HEARING ISSUES

1. What deployment health lessons have been learned from the Persian Gulf War?

One of the major obstacles in resolving health questions about the Gulf War was the lack of individual data on predeployment health status, exposures during deployment and health status after the war. Without data, it is difficult for researchers to determine the health changes among Gulf War Veterans, and for the Department of Veterans Affairs to treat and connect these illnesses to deployments. **(Attachment 3, p. 3)**

There were no unique health screenings done prior to deployment during the Gulf War. According to Dr. Michael Kilpatrick, Deputy Director for the Deployment Health Support Directorate, "If you were on active duty, you were generally assumed to be deployable." **(Attachment 5, p. 1)**

Another lesson learned from the Persian Gulf War is the need for complete and accurate recordkeeping regarding immunizations and use of investigational drugs. Military medical record keeping during the Gulf War was service specific and handled by the respective military Surgeons General. The Army and the Air Force deployed an abstracted record at the time of mobilization instead of individual health records. Navy and Marine Corps personnel deployed with full individual health records. **(Attachment 6, p. 1)**

During the Gulf War, there was limited environmental monitoring in the theater, and no means of tracking and centrally reporting diseases and nonbattle injuries during the war. **(Web Resources 1)** The IOM recommended DOD, "Collect and manage environmental data and personnel location, biological samples, and activity data to facilitate analysis of deployment exposures and to support clinical care and public health activities." **(Attachment 2, p. 3)**

Anthony Principi, Secretary of the Department of Veterans Affairs stated in a recent letter sent to Donald Rumsfeld, Secretary of the Department of Defense, "Much of the controversy over the health problems of veterans who fought in the 1991 war with Iraq could have been avoided had more

extensive surveillance data been collected." (**Attachment 7, p. 1**) Secretary Principi noted, "data on any testing of troops potentially exposed to chemical, biological or radiological warfare agents, in addition to environmental monitoring could be critically important in our later health assessment." (**Attachment 7 p. 1**)

Secretary Principi also requested, "more extensive post-conflict health data" such as administering a "detailed post-war health questionnaire to accurately document the health status and health risk factors of Gulf War troops immediately after the conflict." This data would be necessary for VA to address post-war health concerns. (**Attachment 7, p. 2**)

Inaccurate information regarding the location of servicemembers in the theater presented problems in identifying exposures to various health threats. Both the Institute of Medicine and the Presidential Advisory Committee recommended DOD improve its ability to track the location of units in the theater. During the Gulf War, DOD established systems to identify the location of units down to the company level, however this data was not as useful for epidemiological studies as data on individual servicemembers' locations would be. (**Web Resources 1**)

2. What steps have been taken to apply the lessons learned to protect and monitor the health of deployed forces?

The DOD has created pre-deployment and post-deployment health assessments to validate an individual's medical readiness to deploy and address health concerns upon their return. The health assessments are questionnaires servicemembers fill out. Troops are asked to rate their health, and are asked whether they have any health concerns, or concerns about possible exposures or events during their deployment. Those service members who answer "yes" to certain questions will be referred for further examination. Questionnaires are reviewed and signed by health care personnel. (**Attachment 8**)

After a physician reviews the form, it is sent to Walter Reed Army Medical Center in Washington, D.C., where it is scanned electronically and stored for future use. According to Kilpatrick, the health assessments are used "to see if there are any changes in service members' health or condition

that may require attention before or after they deploy." (**Attachment 5, p. 2**) Data from the health assessments are maintained by the Defense Medical Surveillance System (DMSS).

DOD believes its predeployment and postdeployment questionnaires fulfill Public Law 105-85 requirements to conduct pre-deployment and post-deployment medical examinations of soldiers. However, some believe the questionnaires are not very useful, and are a poor substitute for medical examinations. The questionnaires are subject to bias and inaccuracies since soldiers may be under pressure to deploy and may not be forthcoming about health problems.

The Institute of Medicine Committee on Strategies to Protect the Health of Deployed U.S. Forces recommended discontinuing the predeployment and postdeployment health questionnaires unless, "they are warranted for military reasons other than gathering baseline and postdeployment health status information." (**Attachment 2 p. 89**) The IOM found the questionnaires were not useful in providing a baseline measure of health status for personnel or assessment of the health of servicemembers upon their return.

Instead, the IOM recommended DOD annually administer an improved Health Evaluation and Assessment Review (HEAR) to reserve and active-duty personnel to obtain baseline health information. The HEAR is a computer-assisted interview which addresses various topics of behavioral health risks, mental health, perceived health, medical care utilization, chronic conditions, family history and reproductive health. Results are provided to health care providers with certain responses flagged to facilitate interventions. The IOM believes routine capture of information from the HEAR should make it a more reliable source of information about pre- and postdeployment health rather than data hastily gathered immediately before or after a deployment. IOM recommended the HEAR include questions related to signs of medically unexplained physical symptoms. The IOM also noted the questionnaire should be validated by comparing results with those obtained through individual interviews. (**Attachment 2, p. 89**)

Since the Gulf War, medical recordkeeping policy continues to be made by each military service for routine activities in their medical treatment facilities. It is now standard policy for Army and Air Force personnel to use abstracted records for deployments. Navy and Marine

Corps personnel continue to deploy with full individual health records. However, there continue to be concerns regarding the accuracy of reserve unit medical records.

A long-term goal of the Force Health Protection Strategy is to for each servicemember to have a comprehensive, lifelong computer-based patient record of all illnesses, medical care, immunizations and exposures.

(Attachment 3, p. 5) The DOD is currently testing two systems, CHCSII and Theater Medical Information Program to collect immunization data electronically through a centralized data base, along with computerized medical files currently being gathered on deployed military personnel from all the services in order to document deployment-related health problems. The Special Forces now use handheld computers to gather and store medical data on soldiers and later transmit the data to rear operations headquarters. **(Attachment 5, p. 2)**

The Medical Protection System (MEDPROS) is a database the Army uses that tracks immunizations for soldiers, and automates the Army's medical readiness system. **(Attachment 9, p. 1)** The Defense Medical Surveillance System is the corporate executive information system for medical surveillance decision support for the Military Health System. DMSS tracks health care data from individuals from induction to retirement. DMSS receives hospitalization, outpatient visits, immunization, deployment and mortality data, as well as data from pre- and post-deployment health assessment surveys. **(Attachment 9, p. 2)** The DMSS is also linked to the DOD Serum Repository, which houses over 30 million serum specimens collected from active duty service members since the late 1980s. **(Attachment 9, p. 2)** Service members who are set to deploy must have a blood sample no older than 1 year.

DOD has established a system for identifying which servicemember deployed to the theater. The services are required to provide deployment data to the Defense Manpower Data Center (DMDC) in Monterey, California, which is responsible for maintaining a database on those servicemembers who are deployed. The DMDC database includes information on the units and personnel within those units who have deployed to a theater. However, DOD does not have a system for tracking the movement of individual servicemembers in units within the theater. Individual troop data is needed to accurately identify exposures of servicemembers to health hazards in the theater. **(Web Resource 1)**

In 1994, the U.S. Army Center for Health Promotion and Prevention Medicine (USACHPPM) was established in order to enhance DOD's ability to perform environmental monitoring and tracking. In 1995, the 520Th Theater Army Medical Laboratory was established. The laboratory is a deployable public health laboratory which can provide environmental sampling and analysis in theater. The sampling can be used to determine what preventative measures and safeguards should be taken to protect troops from harmful exposures. **(Web Resource 1)**

The information USACHIPPM obtains through air, soil, and water sampling is entered into a database linked with DMDC's information on the units deployed to the theater. But using mapping data obtained from the National Imaging and Mapping Agency, USACHIPPM analysts can identify which units are in the most danger of exposure to environmental contaminants. This is known as the Geographical Information System, and it can calculate the degree of risk to specific units at specific theater locations. However, information on individuals within units is not available. **(Web Resource 1)**

Concerns remain regarding the use of pesticides during deployment. During the Persian Gulf War, pesticides were used frequently to prevent diseases caused by sand flies such as leishmaniasis and sandfly fever. Leishmaniasis and sandfly fever are viral infections obtained from the bite of sand flies. Sand flies are very small, about one-third the sized of mosquitoes and can be hard to see. Symptoms of leishmaniasis include sores on skin, mouth and throat, and fever, weight loss, anemia, swelling of the spleen and liver and possible death. Symptoms of sandfly fever include headache, fever, muscle aches, and in severe cases can cause inflammation of the brain and neck rigidity. The only countermeasure to leishmaniasis and sandfly fever is to prevent sand fly bites by using the DOD Insect Repellent System, and by sleeping under a treated bed net. **(Attachment 10, pp. 1-2)**

Dr. William Winkenwereder, Assistant Secretary of Defense for Health Affairs will present testimony regarding steps the Department of Defense has taken since the Persian Gulf War to protect and monitor the health of deployed forces, and to implement Public Law 105-85, Sections 765, 767, and 768.

Dr. Robert H. Roswell, Under Secretary for Health, Department of Veterans Affairs will present testimony on the steps the VA has taken to address post war health concerns and provide quality healthcare to veterans.

Dr. John H. Moxley, Managing Director, North American Health Care Division, Korn/Ferry International will present testimony regarding the recommendations made in the Institute of Medicine report entitled, "Protecting Those Who Serve: Strategies to Protect the Health of Deployed U.S. Forces."

Dr. Manning Feinleib, Professor of Epidemiology, Bloomberg School of Public Health, John Hopkins University, will present testimony related to the design and implementation of surveillance systems needed to generate valid epidemiological data on deployed forces.

Mr. Steve Robinson, Executive Director, National Gulf War Resource Center, Inc., will present testimony related to the steps DOD has taken since the Persian Gulf War to protect and monitor the health of deployed forces and to comply with Public Law 105-85.

ATTACHMENTS

1. Public Law 105-85, National Defense Authorization Act, 1998
2. "Protecting Those Who Serve: Strategies To Protect The Health Of Deployed U.S. Forces," Institute of Medicine, (2000).
3. Captain David H. Trump. "Force Health Protection: 10 Years of Lessons Learned by the Department of Defense." *Military Medicine* (March 2002).
4. Information for Member of Congress entitled, "Department of Defense Force Health Protection" (March 12, 2003).
5. Sgt. 1st Class Doug Sample, "Pentagon Has A New Strategy for Monitoring Deployment Health Care" American Forces Press Service (February 11, 2003).
6. Information Paper entitled, "Military Medical Record Keeping During and After the Gulf War."
7. Department of Veterans Affairs Secretary Anthony J. Principi letter to Secretary Donald Rumsfeld (February 14, 2003).
8. Pre-deployment and Post-deployment health assessments.
9. Information Paper entitled, "Significant Improvement in Army Force Health Protection and Medical Readiness Since 1991" (February 26, 2003).
10. Preventative Medicine Briefing on the Medical Threat in Iraq. Col. Steve Jones US. Army Medical Department Activity, Fort Campbell, Kentucky (March 10, 2003).

WEB RESOURCES

1. General Accounting Office Report, "Defense Health Care: Medical Surveillance Improved Since Gulf War, but Mixed Results in Bosnia." [NSIAD-97-136](http://www.gao.gov/NSIAD-97-136), May 13, 1997 <http://www.gao.gov/>
2. Presidential Advisory Committee on Gulf War Veterans' Illnesses Final Report. <http://www.gwvi.ncr.gov/toc-f.html>