STATEMENT BY

MS. ELLEN EMBREY

DEPUTY ASSISTANT SECRETARY OF DEFENSE

FORCE HEALTH PROTECTION AND READINESS

DEPARTMENT OF DEFENSE

BEFORE THE

SUBCOMMITTEE ON DEFENSE

APPROPRIATIONS COMMITTEE

UNITED STATES HOUSE OF REPRESENTATIVES

MAY 1, 2007

NOT FOR PUBLIC RELEASE UNTIL

RELEASED BY COMMITTEE

Mr. Chairman and distinguished members of the subcommittee, thank you for the opportunity to discuss the Department of Defense's preventive medicine programs, particularly as they relate to sustaining the physical and mental health and fitness of our deployable forces for military operations around the globe.

The Department's force health protection and medical readiness programs use a wide range of military health system resources to promote health and healthy lifestyles; to leverage science, medicine and technologies to prevent or reduce the risk of illness, disease and/or preventable injuries; and to employ and continuously enhance health protection measures to minimize effects of environmental or occupational exposures and stressors.

The military health system is fully committed to protecting force health and sustaining the medical readiness of our active and reserve component military personnel, as well as our deploying DoD civilian and contractor personnel. This commitment begins at accession, is continued through periodic health assessments, health promotion and preventive medicine throughout their military service—in peacetime and during deployments—and extends through separation or retirement.

The Department is particularly focused on identifying and mitigating health risks and taking preventive and protective measures associated with operational deployments. For deploying forces, we conduct pre-deployment baseline health assessments, provide ongoing health protection and health risk management services during military deployments, and conduct post deployment health assessments and follow-ups to support early identification and mitigation of emerging health problems.

The Department accomplishes force health protection and improves individual medical readiness by implementing programs and practices designed to sustain and enhance fitness and health for our deployable forces. This includes the Military Departments' execution of health promotion, prevention and protection programs world-wide, as well as global medical and rehabilitative care and management. Through these efforts, our deploying forces are better equipped to survive and perform in stressful combat situations. These healthy forces are more productive, more resistant to illness or injury, more resilient to the adverse influences of stress, and can usually recover more quickly in the event of injury or illness.

Examples of preventive medicine programs utilized in support of Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF) include immunizations against anthrax and smallpox threats; prophylactic medications, including anti-malarials; periodic health assessments; control of disease vectors; food and water safety assurance programs; field hygiene and sanitation programs; disease vector monitoring and control; and comprehensive occupational and environmental health risk monitoring.

These programs are carried out by our military health systems' preventive medicine, environmental health, and veterinary personnel – all of whom are highly trained and dedicated professionals. Thanks to their efforts, prevention of disease and injury has helped US forces avoid what historically has been the far greater cause of casualties than injuries inflicted by enemy combatants. Disease and non-battle injury rates, also referred to as "DNBI rates", for Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF) continue to be the lowest reported for any previous major military contingency operation. The DNBI rate per week has been about 5% in OEF and 4% for OIF. For comparison, DNBI

rates per week for the 1991 Gulf War were 6.5%; for Bosnia (Operation Joint Endeavor), 7.1%; for Operation Joint Guardian (Kosovo), 8.1%.

Low DNBI rates are a true force multiplier. Fewer personnel affected by illness and injury yields a decreased requirement for replacements, and less demand for medical treatment and evacuation.

In August 2006, preventive medicine formally became a key and essential component of the Department's deployment medicine policy as an update to a DoD Instruction, 6490.03, "Deployment Health." This policy instruction established new policies, revised and updated old deployment health and preventative medicine policies, and updated and incorporated additional lessons learned from the 1991 Gulf War. The instruction's key policy changes included:

- Expanded to ALL deployments – core preventative medicine activities required for all deployments are identified
- Expanded to ALL deployers – prevention measures required for all US deployers (military, civilian and contractor personnel) were identified
- Added a new requirement to track each individual's daily location when deployed to theaters of operations, i.e., required daily electronic location records for every deployed individual. This requirement is being phased in over the next three years.

Tracking location data in theaters of operations will not only improve our ability to document individuals exposed to specific occupational or environmental incidents posing a potential health risk, it will also provide commanders with enhanced personnel accountability and visibility in the battlespace.

Individual medical readiness (IMR) is defined as the extent to which an individual Service member is free of health-related conditions that could limit their ability to participate fully in military operations while deployed. Monitoring and optimizing vital health protection parameters sets the stage for maximal human performance. To assure individual medical readiness, the DoD issued comprehensive policy guidance in January 2006 directing the Military Departments to begin tracking six key elements necessary for each Service member's medical readiness:

1. Satisfactory dental health (Dental Class 1 or 2);
2. Up to date on all required immunizations;
3. All medical readiness laboratory tests current and on file, e.g., HIV;
4. All required medical personal protective equipment issued, e.g., gas mask spectacle inserts;
5. No deployment limiting medical conditions; and
6. The periodic health assessment is complete (annual requirement).

Detailed IMR reports inform commanders about the health status of their Service members with any deficiencies clearly identified for their attention. The minimum DoD goal is 75% of the force fully medically ready to deploy at any given time. As of January 2007, about 92 % of the active force (27% are indeterminate) and about 83% of the Reserve Component are ready to deploy (34% are indeterminate). The significant number of personnel whom we are unable to determine their medical readiness status reflects a lack of an enterprise-level electronic data collection, analysis, and reporting system. We are working hard to fix this.

A major challenge for the DoD is improving Reserve Component medical readiness. Resource limitations in the Reserve Components, e.g., limited numbers and types of unit-level military medical staff, limited entitlement to government-provided preventive health care services or treatment of conditions identified

during annual health assessments, and restricted access to Reserve Component Service member medical data (pharmacy, civilian medical records, etc.) are difficult problems. We have established a working group with the Assistant Secretary of Defense for Reserve Affairs and the Military Departments to recommend options to overcome these challenges.

Closely aligned with the IMR program is a requirement for Joint Medical Standards for Deployments. Currently, the Military Departments have differing medical standards that are used to qualify individual personnel for deployment. Establishing common standards will ensure that individuals are not deploying to areas where their conditions cannot be treated adequately or where they would require a disproportionate share of the medical resources needed to treat our wounded Service members. In addition, there is a critical need to ensure medical standards for deployment apply to deployed government civilians and US contractors as well. A tri-Service policy on the medical standards for deployment is being developed in partnership with the Military Departments and the staff of the Under Secretary of Defense for Personnel and Readiness.

Health Assessments and Screenings

The conduct of Periodic Health assessments and health screenings are key components of our medical readiness and preventive medicine programs. These assessments ensure sustainment of a fit, healthy, and ready force through the prevention, early identification, and treatment of deployment-related health conditions.

Periodic (Annual) Health Assessments (PHA). In February 2006, a DoD policy was issued requiring periodic health assessments for all Service members. This annual health assessment program evaluates each Service

member's health status and availability to meet mission requirements. All other assessment tools augment the PHA.

Pre-deployment Health Assessments. The DoD administers pre-deployment health assessments to ensure that only medically fit personnel deploy in support of contingency operations. The assessments confirm and document health readiness status and identify any needs for additional clinical evaluation caused by changes in health since the most recent Periodic Health Assessment. They also provide a baseline snapshot of the health of deploying Service members that can be compared to their health upon return from the deployment. Since January 1, 2003, more than one million Service members have completed pre-deployment assessments, many more than once.

Post-deployment Health Assessments. The DoD requires returning personnel to undergo post-deployment health assessments (PDHAs) to document self-reported health status, deployment experiences impacting on health, including environmental exposures, and any health concerns. The assessments enable health care providers to promptly refer those needing medical follow-up evaluation and care – both preventative and curative. Between January 1, 2003, and March 8, 2007, more than one million redeploying Service members completed the PDHA process, many more than once. About 93% of returnees have described their general health as "good," "very good," or "excellent."

Post-deployment Health Reassessments. The Post-deployment Health Reassessment (PDHRA) is a force health protection assessment process designed to enhance the deployment-related continuum of care while focusing on secondary and tertiary prevention (identify and alleviate established disease at an early stage, in order to improve or maintain function). Targeted at three

to six months after returning from contingency operations, the PDHRA process provides education, screening, and a comprehensive health assessment to identify and facilitate access to care for deployment-related physical health, mental health, and re-adjustment concerns.

Health and adjustment concerns may not be noticed immediately following deployment. In subsequent months, concerns may surface ranging along a scale of severity. While effective health care and adjustment counseling services are available, Service members may be unfamiliar with navigating the various systems of care, or believe their symptoms do not warrant seeking care. The PDHRA is designed to identify emerging conditions and provides assistance to the Service member in accessing services for a broad range of post-deployment concerns.

As of April 16, 2007, a total of 274,142 Service members had completed the PDHRA with their data recorded in the Defense Medical Surveillance System. Key findings include: 48% indicated no physical health, mental health, or adjustment concerns related to their deployment; and 14.2% rated their health better than before deployment, 58.7% about the same, and 24.3% as worse. Providers referred 31% for further evaluation and possible treatment.

Enhanced Mental Health Screening. DoD's mental health assessment programs and services for Service members are being expanded to identify mental health effects of operational stress and other mental health conditions, before, during, and following deployments. DoD addresses mental health concerns in pre- and post-deployment health assessments.

Every Pre-deployment Health Assessment includes questions to determine whether the Service member has sought assistance or received care for mental

health problems in the last year and whether the individual has any current questions or concerns about their health as they prepare to deploy. The responses to these questions are combined with a review of military medical records to identify those individuals who may not be medically appropriate to deploy.

Because of the mental health risks associated with current deployments, the PDHA and PDHRA supplement the general health questions with questions to identify symptoms of possible mental health conditions, including depression, PTSD, or alcohol abuse (PDHRA only). Additionally, each individual is asked if he or she would like to speak to a health care provider, counselor, or chaplain to discuss stress, emotional, alcohol, or relationships issues and concerns. Two new questions will be added to all assessments to identify potential risk for traumatic brain injury (TBI) beginning in June 2007.

DoD's Preventive Mental Health Efforts

The Department of Defense (DoD) has a broad range of programs to sustain the mental health and well-being of all Service members, both during deployment, as well as pre- and post-deployment. Cross-functional mental health education and training are provided across the deployment cycle, with specific emphasis on post-deployment reunion, reintegration, and readjustment. Education is a mandatory requirement of each health assessment process. Stress management is one of the key elements of mandatory health and wellness programs at every military installation. The DoD emphasizes prevention and education to assist families as well as Service members to prepare them for the stress of deployment and family separation. For example, the Mental Health Self-Assessment Program offers confidential internet and telephone-based mental health assessments, as well as in-person screening at base-wide "screening days."

Immunizations

Immunizations are a very important tool in our preventive medicine and force health protection armamentarium. Current immunization requirements for personnel to enter the US Central Command (USCENTCOM) area of responsibility include the five routine immunizations, currently required of all Servicemembers: hepatitis A, hepatitis B, influenza, tetanus/diphtheria/pertussis, and polio. Theater-specific immunizations based on the theater health threat plus those associated with possible terrorist activity include: anthrax, smallpox, typhoid, measles/mumps/rubella, and yellow fever. The Navy and Marines also require a meningitis immunization.

Anthrax vaccinations are mandatory for Service members, emergency essential designated government civilians, and contractor personnel performing mission-essential services assigned to USCENTCOM area of responsibility for 15 or more consecutive days. Anthrax immunizations are also required for those on the Korean Peninsula for 15 or more consecutive days, and for special units with bio-warfare or bio-terrorism related missions. Vaccinations begin up to 60 days before deployment or arrival in higher threat areas.

Anthrax vaccinations are voluntary for DoD Service members who are not in the mandatory groups and have received at least one dose of anthrax vaccine absorbed during or after 1998. Vaccinations are voluntary for DoD civilians and adult family members, contractors and their accompanying US citizen family members who are residing in the USCENTCOM area of responsibility for 15 or more consecutive days or residing on Korean Peninsula for 15 or more consecutive days.

The current policy for the Smallpox Vaccine Immunization Program is that Service members, emergency essential employees and equivalent DoD employees deployed to USCENTCOM and the Korean Peninsula for 15 or more consecutive days will be vaccinated against smallpox unless medically exempted. In addition, DoD smallpox response teams and hospital/clinic teams are being vaccinated against smallpox. These are personnel who would play a critical role in vaccinating Service members before an attack and responding to a smallpox outbreak. As of April 11, 2007, 1,191,551 have been vaccinated (beginning in September 2002); the USCENTCOM has vaccinated 84% of its personnel.

Force protection measures include medications that are FDA-approved and widely used by the civilian population. Because our operational environment is often uniquely austere, the effects of these medications may vary in operational settings. For medications of particular concern, we engage outside experts to aid us in education and research activities to make certain that medications given to Service members have maximal benefit and minimal risk. An example of such an effort surrounds the anti-malarial medication Mefloquine. In response to reports of adverse neuropsyhiatric events following administration, the Department developed an extensive screening and education program designed to mitigate potential unwanted effects. In addition, we have completed two of three studies examining all anti-malarial medications and adverse events. To date no association of increased adverse health effects and anti-malarial medications has been identified.

Occupational and Environmental Health Surveillance

Occupational and environmental health surveillance is another key component of deployment preventive medicine. DoD recognizes the need to monitor the deployed environment for potentially hazardous materials and to document and

archive the results so that they can be used as an aid in diagnoses and prevention of illness, for curative medical care of exposed personnel, and, when indicated, for epidemiologic research studies. DoD also recognizes the importance of sharing the environmental monitoring information with the Department of Veterans Affairs and with our international partners.

The aforementioned DoD instruction on "Deployment Health" strengthened requirements for deployment occupational and environmental (OEH) surveillance, including comprehensive OEH data reporting and archiving and biomonitoring for personnel with potential exposures to lead or depleted uranium.

DoD's deployment OEH program includes many key prevention measures to protect our deployed personnel from potentially hazardous exposures, including comprehensive pre-deployment health threats and countermeasures briefings; baseline, routine, and incident-related occupational and environmental monitoring; the creation of environmental monitoring summaries for all base camps, documentation in the medical records of any hazardous exposures; and completion of the post-deployment health assessment and post-deployment health reassessment which include questions about occupational and environmental health concerns and exposures.

Pre-deployment hazard assessments are routinely completed based on medical intelligence provided by the Armed Forces Medical Intelligence Center and from other sources. This intelligence greatly aids in the identification of indigenous diseases, disease vectors, and environmental threats that are likely to be encountered during the deployment. Well-trained and equipped Army, Navy, and Air Force preventive medicine, environmental health, and veterinary personnel conduct on-going, in-theater OEH surveillance, and closely monitor air, water, soil, food, and disease-carrying vectors for health threats.

Three types of OEH data are collected and reported: “baseline data,” which are collected on air, water, and soil samples at the time base camps are established; “routine (or periodic) data,” such as follow-up air, soil, and water monitoring data used to detect any changes in potential contaminants over time; and “incident-related data,” which include data acquired during investigations of chemical spills, industrial accidents, food or waterborne illness outbreaks, and chemical/biological agent exposures or attacks.

All OEH monitoring data is documented and archived in a systematic manner. Environmental samples are identified with a date, time, and location that can be linked with personnel who were at a particular location where an exposure may have occurred at a specified date and time. Possible hazardous exposure incidents are thoroughly investigated; extensive environmental monitoring accomplished; appropriate medical tests ordered; and rosters of exposed personnel assembled and archived. Medical records entries are made to document any exposures; area and date-specific environmental monitoring summaries are being developed by the Services to document environmental conditions at base camps potentially affecting health and also to inform health care providers of those environmental conditions and possible health risks associated with the conditions.

All deployment OEH data and reports are required to be archived centrally at the US Army Center for Health Promotion and Preventive Medicine (USACHPPM). The Army is the lead Service for joint deployment OEH surveillance data archiving.

Summary of Results of OEH Surveillance during OIF and OEF

The Services have extensive deployed preventive medicine personnel in OIF and OEF who are well trained in OEH surveillance. As a priority, most of the air and soil sampling occurs in areas where the largest concentrations of Service members are assigned – that is, in and around our base camps. In addition, all drinking water, whether it is procured bottled water or water purified by our reverse osmosis purification units, is tested for bacterial contamination as well as other organic and inorganic parameters.

USACHPPM recently completed a summary report of OIF and OEF occupational and environmental monitoring that has been performed by their laboratory from January 2003 to June 30, 2006. USACHPPM laboratories have analyzed nearly 5500 environmental media samples. These samples were taken at over 275 locations in the USCENTCOM area of responsibility, and include 3,689 air samples, 733 water samples, and 1044 soil samples. Other water samples have been taken and analyzed in theater.

Incident-related environmental sampling has taken place at specific locations in OIF and OEF because of concerns about potential contamination surrounding specific incidents involving potentially hazardous materials. Some examples include:

- Al Tuwaitha Nuclear Research Center, Iraq (2003): Possible excessive exposure levels of ionizing radiation when the research facility was looted after being left unattended early in the war. Extensive environmental assessments and personnel radiation dosimetry were performed, health evaluations were initiated, fact sheets were developed with pertinent information about the possible exposures for US and Coalition members, and town hall-type meetings were held where experts briefed the results to Service members. Personal dosimetry results demonstrated that radiation

doses to US and Coalition personnel were within acceptable limits. No short- or long-term health effects are expected.

- Qarmat Ali Water Treatment Plant, Iraq (2003): Possible exposure to sodium dichromate and polychlorinated biphenyls occurred to approximately 250 US Service members. Extensive environmental sampling was accomplished and both soldiers and civilians underwent comprehensive occupational medicine evaluations. No specific abnormalities attributable to possible exposures were identified, and no long-term health effects are expected.

Depleted Uranium Exposure Monitoring (2003-ongoing). The DoD implemented an OIF/OEF deployment biomonitoring policy in 2003 for exposure to depleted uranium (DU). The policy specifies procedures for identifying personnel exposed to DU, assessing their degree of exposure, and biomonitoring (urine bioassays) to document levels of exposure. During OIF and OEF, there has been extensive medical surveillance for possible DU exposure. As of September 30, 2006, 2161 personnel have submitted urine samples to determine uranium concentrations in their urine. Only nine individuals have had confirmed exposures, six additional individuals have preliminary, and as yet, unconfirmed exposures to DU. Confirmation requires highly sensitive methods that measure the presence of uranium many orders of magnitude below levels that may result in any risk to health. In each of the confirmed DU exposures, the individuals had retained metal fragments or injuries consistent with metal fragments. Three of these personnel with confirmed exposures have already been thoroughly evaluated in the Baltimore VA Medical Center Depleted Uranium Medical Surveillance Program, and several more are to be scheduled in the near future. None of the six personnel with confirmed DU exposures had uranium levels that posed a risk to their health.

Hazardous Noise (2003 - ongoing). Hazardous noise capable of inducing permanent hearing loss is a common exposure during military training and deployments. The effects of noise exposure can immediately impact tactical operations. The Services are responding by strengthening their hearing conservation programs. There is now a greater emphasis on the prevention of hearing loss in training and operational settings. For example, there is increased education and training on the proper use of communication enhancement protection devices, which protect the wearer from hazardous noise by filtering out unwanted noise. In addition, the Army now administers post-deployment audiograms to soldiers returning from deployment to document any hearing loss acquired during deployment.

The Services are documenting significant occupational and environmental exposures to hazardous agents in the medical records of involved Service members. Rosters of Service members who were involved in the specific exposure incidents have been established in case there is a need to contact them for future treatment or evaluation or in case the VA needs the information for claims adjudication or clinical management.

Extensive baseline, routine, and incident-driven OEH surveillance continues in OIF and OEF as well as other deployments. The vast majority of sampling indicates very low, if any, levels of exposures to hazardous agents. There has generally been an absence of health effects associated with these exposures with the exception of elevated dust exposures throughout USCENTCOM that resulted in transient upper respiratory symptoms.

Health Risk Communication

Health risk communication is perhaps the most important way to help individuals understand how to take responsibility for their health. Because of this, a DoD Deployment Health Risk Communication Working Group was established. It has Tri-Service representation as well as representation from the Departments of Veterans Affairs (VA) and Health and Human Services. The Working Group collaborates to develop fact sheets and other prevention-oriented communication products related to deployment health risks for use by all of our Services. More recently the working group has partnered with two other risk communication working groups to develop dozens of facts sheets and identify hundreds of quality products from other reputable sources, including Military One Source, and incorporate them into an online, award-winning library: the Deployment Health and Family Readiness Library (http://deploymenthealthlibrary.fhp.osd.mil/home.jsp). The Library provides an easily accessed location for Service members and military leaders, families, and health care providers to obtain deployment health-related and family readiness-related communication products in one location.

Research

Perhaps one of the less visible, but very important, contributors to the DoD's preventive health program is the application of research to identify breakthrough solutions to solve problems that endanger the health of our Service members.

DoD research programs directly and indirectly support the broader medical health care system in meeting its preventive medicine needs. The Services are engaged in some exceptional efforts to improve our preventive medicine program. The research provides valuable contributions in diagnostic capabilities for avian influenza, hemorrhagic fever, and other diseases requiring high levels of biocontainment or other special expertise. The DoD's overseas laboratories

monitor and research malaria drug resistance and identify new ways to prevent infection with this global threat. Identifying methods to improve insect vector control and repellency in disease endemic regions is critical to preventing insect-borne disease and is a key command competency.

Understanding human factors associated with combat, training, and other military-specific operations is critical to preventing battle and non-battle injuries. The DoD has diverse research programs supporting Service member sustainment and performance, health hazard protection, and health monitoring. Our laboratories work on new products and develop operational doctrine to prevent heat, cold, and altitude injuries and improve performance in those environments. The research programs also serve an important role in identifying, characterizing, and monitoring environmental contaminants that could pose health risks to Service members deployed to areas where they occur.

Long-term research projects also contribute to efforts to improve the preventive medicine program. For example, the Millennium Cohort Study will follow the health of approximately 140,000 Service members for as long as 20 years. The primary objective is to evaluate the long-term health of Service members, and the potential effects that deployments and other military exposures may have on health. If specific military exposures are shown to lead to long-term health effects, the DoD can focus on developing preventive measures to reduce their impact on Service members.

Another such project, the Joint Theater Trauma Registry, collects data from each of the Services' trauma registries to capture details about traumatic injuries and the medical care provided in combat support hospitals, and aboard ships and aircraft. Analysis of Registry data provides concrete data on measures to prevent future

traumatic injuries, such as evaluation of the effectiveness of improved body armor or the new Kevlar helmet, and the impact of blast injuries on Service members.

These and other research efforts play a direct role in helping to maintain and sustain the health of the Service members by preventing disease and injury caused by the spectrum of health threats. On-going research into areas of Traumatic Brain Injury, Post-traumatic Stress Disorder, human performance optimization, and many others will yield advancements to improve the DoD's ability to prevent illness and injury or mitigate the effects of illness and injury.

Summary

The importance of our deployment preventive medicine programs cannot be underestimated when it comes to the protection of our Service members and contribution to the mission. Thanks to the leadership of the entire preventive medicine community, including the Army Center for Health Promotion and Preventive Medicine, the Air Force Institute for Operational Health, and the Naval Environmental Health Center, all military commanders have a clearer understanding of the importance of preventive medicine as a force multiplier supporting operational contingencies. While we are proud of the accomplishments of our Commanders and of the Services' preventive medicine teams in contributing to record low DNBI rates, the DoD will work to reduce illnesses and non-battle injuries to even lower levels. The DoD remains firmly committed to making repeated refinements and improvements to make our preventive medicine program even better.

Mr. Chairman, thank you for the opportunity to provide you and the members of the Subcommittee with an overview of the DoD's deployment preventive

medicine, deployment health, and research programs to protect the health of our deployed personnel.