



# FORCE HEALTH

PROTECTION AND READINESS

Volume 4, Issue 2 • 2009



## Neurocognitive Assessment Tool

*Helping to Diagnose  
Traumatic Brain Injury*

## Real Warriors Campaign

*Hearing from Injured  
Service Members*

## Comfort Mission

*Naval Medical Ship Aids in  
Humanitarian Efforts*



The Magazine of Force Health Protection and Readiness  
2009 ■ Volume 4, Issue 2

**Acting Deputy Assistant Secretary  
of Defense for Force Health Protection  
and Readiness**

Col. Donald L. Noah

**Director of Strategic Communication for  
the Military Health System**

Michael E. Kilpatrick, M.D.

**Editor**

Rob Anastasio

**Art Director**

Del Moran

**Graphic Designer**

Jaci Kubik

**FHP&R Strategic Communications Team**

Monica Valdiviez-Wiley

Kelly Kotch

Richard Searles

Terri Lukach

Peter Graves

Matt Pueschel

---

FHP&R is published quarterly by the  
FHP&R Communications Office.

Print and visual submissions of general interest  
to active duty, reserve component members,  
veterans and families are invited. Please send  
articles with name, phone number, e-mail,  
mailing address and comments to:

**Force Health Protection  
and Readiness Magazine**

5113 Leesburg Pike, Suite 901,

Falls Church, Virginia 22041

Phone: (703) 578-8419 • Fax: (703) 824-4229

E-mail: [FHPWebmaster@tma.osd.mil](mailto:FHPWebmaster@tma.osd.mil)

The editor reserves the right to edit all  
submissions for length, readability and  
conformance with DoD style and policy.

**AUTHORIZATION:**

FHP&R is an authorized publication for past  
and present members of the Department  
of Defense. Contents of FHP&R are not  
necessarily the official views of, or endorsed by,  
the U.S. Government or the Department  
of Defense.

## IN THIS ISSUE

---

- 1** From The Desk Of Col. Donald L. Noah, Acting Deputy Assistant Secretary of Defense for Force Health Protection and Readiness
- 2** Assessment Tool Helps with Diagnosing Traumatic Brain Injury
- 3** Fact Versus Fiction: Animal Use in DoD Medical Training Programs
- 4** Comfort Mission: Bringing Humanitarian Relief to South American Countries
- 6** Food Safety in the Military: From Asparagus to Zucchini
- 8** Health Care in Afghanistan: Building Bridges to a Healthier World
- 10** Directive Brings Together Emergency Responders
- 12** DCoE Launches Real Warrior Campaign
- 14** Protecting Your Health: Deployment Occupational and Environmental Health Surveillance Programs
- 16** Dental Health for All Ages
- 18** MHS Technologies Showcased in Presidential Classroom
- 20** Mosquito Repellent: Natural Remedies Provide Easy Solutions
- 21** Resources

FROM THE DESK OF

## Col. Donald L. Noah



**Several military health surveillance efforts have led to the successful prevention of disease outbreaks and other illnesses or adverse health affects of Service members.**

Welcome to the summer issue of Force Health Protection and Readiness magazine. This issue offers lots of great information for our Service members, families, veterans and health care providers. The hard work that is ongoing here at FHP&R is showcased in this magazine and supports the overall goal of our organization – which is to provide for, and promote, a fit and healthy Force. We strongly believe that the research and new initiatives being led by our subject matter experts in our several capability areas will continue to provide our troops the resources they need and deserve.

A few of the new initiatives that FHP&R is spotlighting in this issue includes several DoD humanitarian efforts aimed at bridging the health care gap between the U.S. and countries in need of medical care. One example of this can be found of pages 4-5. The USNS Comfort is a U.S. Navy hospital ship whose mission to provide humanitarian disaster relief and health care training to seven countries in Central and South America has been carried out with great success.

FHP&R magazine always highlights different occupational and environmental health hazards that are a concern to Service members in theater. This issue explores sodium dichromate and how to anticipate, detect, and prevent any hazardous chemical exposures before they occur. Several military health surveillance efforts have led to the successful prevention of disease outbreaks and other illnesses or adverse health affects on Service members.

Have you ever wondered what the process is for food inspection in the military commissaries and other facilities? Our story on food safety in the military explores the rules, regulations, and several entities that collaborate to ensure that the food that is consumed by our Service members is healthy and safe.

We strive to keep all our Service members and their families up to date on the latest health-related information and advances in health research and new work that FHP&R is doing. We are working to provide the latest information in military health and we hope you consider the Force Health Protection and Readiness office a key resource for you and your family. If you have any questions, comments, subscription requests or story ideas, please write to us at [FHPwebmaster@tma.osd.mil](mailto:FHPwebmaster@tma.osd.mil).

*Col. Donald L. Noah*

Acting Deputy Assistant Secretary of Defense  
for Force Health Protection and Readiness

# ASSESSMENT TOOL HELPS WITH DIAGNOSING TRAUMATIC BRAIN INJURY

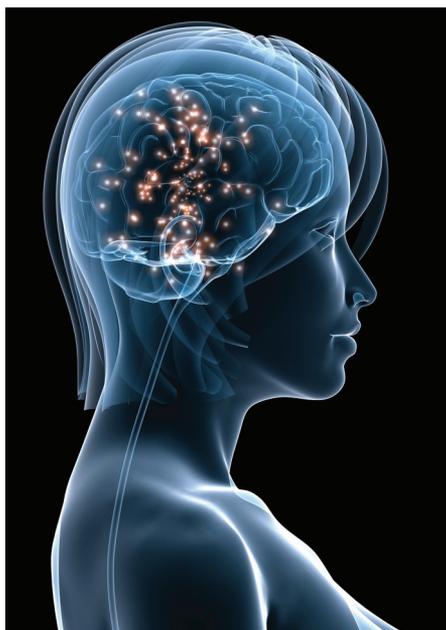
By: Richard Searles, FHP&R Staff Writer

The Department of Defense (DoD) took a major step forward in the testing, diagnosis and treatment of traumatic brain injury (TBI) last year when it issued guidance calling for all the Services to conduct baseline pre-deployment neurocognitive assessments.

The guidance, which was issued May 28, 2008, called for Service members to receive an assessment that measures cognitive performance in areas most likely affected by mild TBI prior to deployment. Individual results from the assessment serve as a baseline in monitoring changes in a Service member's cognitive function.

The Neurocognitive Assessment Tool selected by DoD to accomplish this requirement was the Automated Neuropsychological Assessment Metrics (ANAM). The ANAM is a computerized assessment tool which measures attention, judgment, memory and thinking ability. It has been under testing and development for the assessment of cognition and human performance for over 20 years. The selection of ANAM was based on its long history of use by the military and civilian sector as well as its support in the scientific literature.

"The pre-deployment ANAM assessment has value in that it may be used to establish a cognitive baseline using the Service members' own norms as well as inform healthcare providers should the Service member be subjected to a blast event," said Elizabeth Fudge-Morse,



senior health policy analyst for Force Health Protection and Readiness.

With baseline data available for comparison with post event ANAM assessments, medical providers are armed with important objective information that can be used in conjunction with other clinical findings in diagnosing TBI, even in its mild form.

"Many times Service members may have no visible external injuries after involvement in a blast event yet experience a mild form of brain injury or concussion and symptoms may go unnoticed. Symptoms of mild TBI may include slower reaction time, headaches, irritability, memory impairments, and sleep difficulty," said Fudge-Morse. "The

ANAM may note cognitive changes that can assist the provider in making the decision to return the Service member to duty or implement a treatment plan for the condition."

According to data released on April 15, 2009 by the Defense and Veteran Brain Injury Center, 231,925 Service members have been administered the ANAM.

Although ANAM has proved to be a valuable tool, DoD continues to look for ways to improve the testing, diagnosis and treatment of TBI.

"There's ongoing research by the Services to document the effectiveness of ANAM," said Fudge-Morse. "DVBIC is in the process of conducting a head-to-head comparison study of other automated cognitive tools to ensure we continue using the best instruments available," said Fudge-Morse.

ANAM results are part of Service members' medical records. The results are treated as protected personal health information, and kept confidential using encryption technology and stored in accordance with the Privacy Act of 1974 and the Health Insurance Portability and Accountability Act (HIPAA) of 1996.

## Want More?

[www.dvbic.org](http://www.dvbic.org)

[www.armymedicine.army.mil/prt/anam.html](http://www.armymedicine.army.mil/prt/anam.html)

# FACT VERSUS FICTION: ANIMAL USE IN DOD MEDICAL TRAINING PROGRAMS

By: Peter Graves, FHP&R Staff Writer

If you've ever visited a trauma center in a major United States hospital, you know that it can be chaotic. Patients suffering from a variety of injuries – many extremely serious – can overwhelm physicians, nurses, and other staff in a matter of minutes. Somehow, through all the madness, lives are saved. Why? It's easy - training. Without it, the chaos will almost certainly cost lives. With it, it becomes manageable.

On the battlefield, the chaos can be multiplied by a factor of 1000. Imagine the chaos within that civilian trauma center, and then picture a young combat medic dodging bullets, shrapnel, and possible chemical explosions, all the while attempting to dress major battlefield injuries and prepare the wounded for evacuation in an unimaginably dangerous environment. And yet, in spite of chaos and danger, American Forces in Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF) have experienced the lowest fatality rates in military history. How is this possible? It's easy - training.

The Department of Defense (DoD) is firmly committed to ensuring its medical personnel are fully trained, utilizing the best available techniques in combat trauma and chemical casualty management. In some cases, this means live animals may be employed to simulate human patients. Contrary to many stories circulating in the media, live animal training is not cruel, inhumane, or without purpose.

The employment of live animals in

DoD medical training – including pigs, goats and African green monkeys – is strictly governed and controlled by DoD policy. Before any animal can be employed for training purposes, DoD requires all possible alternative methods to be evaluated. These include the use of human body simulators, task trainers, computer simulations, videos, and actors who simulate symptoms. For some

***It is DoD policy to investigate new, more advanced alternatives which can better replicate the situations combat medics are likely to face.***

procedures, these alternative methods prove more than sufficient. In addition, it is DoD policy to investigate new, more advanced alternatives which can better replicate the situations combat medics are likely to face.

However, the reality is that no suitable alternatives to completely replace the live animal model for trauma training exist at this time. For example, there currently exists no reliable model for hemorrhage control, and loss of blood is the primary cause of potentially preventable death on the battlefield. In addition, today's simulators do not always adequately provide medical trainees with the critical skills required for successful resuscitation, nor do

they prepare them for the physiological responses elicited by living tissue when subjected to the surgical manipulations and/or emergency techniques.

Animals employed by DoD for training purposes are treated appropriately and do not experience pain. Training is supervised and monitored at all times by experienced military veterinary personnel, and animals are deeply anesthetized during training procedures.

DoD will continue to consider and implement alternatives to live animal use in training as they are developed, further minimizing animal use. Until then, DoD will continue to ensure its animal use programs implement the principles of what are known as the three "R's," an animal welfare tenet developed in 1959 by noted scientists W.M.S. Russell and R.M. Birch. These are Reduction (measures taken to reduce animal use), Refinement (developing measures to enhance animal well-being), and Replacement (developing measures to eliminate animal use). DoD has added to that a fourth; Responsibility (an ethic that permeates all aspects of DoD animal care).

That said, live animal training does indeed help equip military medical personnel with the knowledge and skills necessary to save the lives of our warriors on the battlefield. To the families of those wounded on the field of battle, and to our warriors themselves, that's all that matters.

# COMFORT MISSION: BRINGING HUMANITARIAN RELIEF TO SOUTH AMERICAN COUNTRIES

By: Matt Pueschel, FHP&R Staff Writer



**A**s part of a new emphasis on DoD global humanitarian health care efforts, the mammoth 900-foot long, 70,000-ton U.S. Navy Hospital Ship Comfort is on course in the Southern Command (SOUTHCOM) region and delivering on its medical relief goals for “Continuing Promise ’09.”

The converted 1976 oil tanker now serves as a beacon of advanced medical support for conflict or disaster-stricken areas around the world. “It’s a floating hospital and that in of itself is just a magnificent thing,” said David Lieberman, the ship’s chief officer. “Depending on the limitations of the port, we can go anywhere on the globe along the coastlines of the seven continents and we can provide medical care to anybody within reach.”

Onboard personnel report that the Comfort’s Continuing Promise ’09 mission is close to meeting projected efficiencies in terms of patient numbers and services provided in the midst of its April 1-July 31 disaster relief training and health care mission to seven countries in Central and South America (Haiti, Dominican Republic, Antigua and Barbuda, El Salvador, Nicaragua, Panama and Colombia). The estimated \$24 million mission has gathered medical personnel from across DoD, the Public

Health Service, and more than a dozen nongovernmental organizations to work together with providers in each of the host nations, providing a full range of surgical and primary care services to local patients in need.

Five countries (Canada, France, El Salvador, the Netherlands and Nicaragua) also have personnel onboard to assist with care and translation at each of the stops. Ship personnel will further provide dental care, veterinary medicine, engineering and construction services, and biomedical repair. The ship is equipped with two helicopters and two 10-meter boats with canopies, as well as a new fixed platform on the side of the ship, to aid in the transport of patients and providers to and from shore.

In all, about 900 personnel are onboard and 1,300-1,400 will have rotated through by mission’s end. Four operating rooms and about 250 beds will be utilized on the ship and personnel will also go onshore to provide primary care at two sites in each country.

As the fourth such Continuing Promise mission to the SOUTHCOM region, this year’s mission differs from the ’07 Comfort mission in that it features an increased level of partnering among all of the military Services, Coast

Guard, USPHS, non-governmental organizations (NGOs) and the foreign medical contingent. It is also visiting seven countries this time, compared to twelve in ’07, to allow more recovery and quality time with patients.

Surgical patients were pre-selected in extensive planning efforts before the mission began with each host country’s Ministry of Health, and a pre-surgical screening is done early after arrival at each stop. “One of the keys truly for this mission is to select the proper patient with a predictable outcome and the surgical staff has those capabilities, so that we make sure that we provide the maximum benefit without causing a burden for the health care system in the country,” said Capt. James J. Ware, USN, the mission’s medical commander. “That was coordinated early on in our plan with the Ministries of Health.”

The Comfort brings advanced capabilities such as X-ray, ultrasound, MRIs, CT Scans, EKG monitors, backup power, oxygen and suction, centrally located operating rooms to reduce rocking, intensive care unit isolation and overflow capability, vaccination and pharmacy services. The mission also features a full spectrum of specialists from cardiologists, general and orthopedic surgeons, Ear, Nose and Throat



*Tugboats assist the hospital ship USNS Comfort as it pulls into Acajutla, El Salvador, July 25, 2007. Comfort is currently on a four-month humanitarian deployment to Latin America and the Caribbean providing medical treatment to patients in seven countries. (U.S. Navy photo by Petty Officer 2nd Class Joshua Karsten)*

(ENT) and oral specialists, to physical therapists, head and neck surgeons, dermatologists, and pulmonologists. In addition to about 300-400 surgeries that will be performed on the ship in each country, primary care will be provided onshore to 1,000-1,500 patients each day. Comfort personnel will work side by side with local physicians and nurses on the ship and onshore clinics.

Acute needs in primary health and tropical medicine will be examined, and specialized services will include cleft palate and lip repair, cataract surgery, club foot correction and treating hernias, among other chronic conditions. “Some of the patients in these countries are burn victims that may have had burn scars for 5-10 years. We have plastic surgeons onboard and pediatric surgeons that can help a lot of these patients that haven’t had the benefit of seeing those types of specialists in their country,” said Capt. Ware.

Patient health records, diagnoses and accessible prescription determinations will be handed off to the Ministries of Health so that patients can receive appropriate follow-up care with their local doctors and medical societies.

“That’s our biggest goal, is that we want them to be able to have good follow-up care afterwards,” said Lt. Cmdr. Thomas Olivero, USN, a Navy nurse and department head of the ship’s main operating room (OR), pre-op and casualty receiving area. “It’s a lot of communicating with the host nations, working with the Ministries of Health and making sure they understand not only what was done, but providing them a good document on follow-up care. That is a big part of it, and that’s something that we’re really going to strive to accomplish.”

The number of NGOs participating has risen since the ’07 mission in an attempt to grow the humanitarian civilian aspect of the mission. The improved coordination dovetails with a 2005 National Security Presidential Directive calling for the Departments of State and Defense to integrate their health stabilization and reconstruction planning and training efforts. “The partnering is much greater this time,” said Continuing Promise mission commander Capt. Bob Lineberry, USN. “We’ll continue to work closely with the State Department, USPHS folks, but I think what has really changed for this time is that increased

partnering with our NGOs. We want to work very closely with our host nation partners because they’re the ones who are inviting us into the country and we will have some of their medical professionals onboard. A major part of this is being able to share information and collaborate in an environment such as this.”

The humanitarian assistance and disaster response training aspect of the mission is one of the Navy’s key maritime strategies. Furthermore, DoD recently gave global health stability and humanitarian operations a comparable priority to combat operations. Missions such as Continuing Promise, as well as a similar humanitarian medical mission to the Pacific Command (USPACOM) region called the Pacific Partnership have become important components of this policy. DoD is also involved in military-to-military medical training initiatives with the Africa Partner Station and Global Partner Station, and has further provided disaster relief by delivering health care, conducting rescues or transporting aid in recent disasters such as the Indonesia tsunami, earthquakes in Pakistan, Peru and Costa Rica, and flooding in Honduras.



# FOOD SAFETY IN THE MILITARY: FROM ASPARAGUS TO ZUCCHINI

By: Peter Graves, FHP&R Staff Writer

**U**nited States military personnel have enough to worry about. The stresses associated with deployment, combat, and adjustment to new and often dangerous surroundings can all take their toll on all Service members. The very last thing that should occupy the minds of Service members is the safety of the food they consume. The Department of Defense (DoD) has assembled an array of personnel whose mission is to ensure American Service members do not become casualties of unsafe food or water. It's a mission that is as important and critical to American security as those carried out in Iraq, Afghanistan, and other outposts.

Food safety was an important concern for Pentagon leaders long before the recent wave of food scares that affected the U.S. over the last two years. Federal recalls on certain brands of peanuts, tomatoes, lettuce and other products have frightened many Americans. For the U.S. military, the concern exceeds the diseases that contaminated foods carry; it is one of maintaining force readiness.

“If an outbreak of salmonella or other food borne illness were to affect large numbers of forces, it could inhibit the readiness of these forces to respond to emergencies,” said Dr. Salvatore Cirone, DVM, director of Health Science and Force Optimization for DoD’s Force Health Protection and Readiness directorate. The DoD considers this threat serious enough that a number of arduous procedures - with layers of oversight - have been instituted to ensure food provided to military personnel is as safe as possible.

Ensuring the safety of our military food supply is a Service responsibility, although the Army accomplishes certain DoD-wide missions. For instance, the Army Veterinary Service develops approved lists of food suppliers, enforces military sanitary standards for commercial food plants providing products to DoD components, and undertakes laboratory examinations of food products when necessary.

The Worldwide Directory of Sanitarily Approved Food Establishments for

Armed Forces Procurement is one of the most important food safety documents in the military. The DoD is required to purchase all food stuffs from those facilities that have met the stringent criteria of the Veterinary Services. To gain inclusion on this list, a company must have a sound U.S. Department of Agriculture (USDA) or Food and Drug Administration (FDA) safety record (depending on commodity) and be willing to subject its food production and storage facilities to intense, periodic audits by armed forces veterinary personnel.

Upon being placed on this list, an establishment may sell food products to the DoD. Commodities consumed in military commissaries, clubs, and dining facilities are purchased by the Defense Logistics Agency (DLA) or Defense Commissary Agency (DECA) through the Defense Supply Center Philadelphia (DSCP).

In addition to this DoD-wide source approval process, the Air Force retains responsibility for food inspection programs at Air Force bases and may





develop locally approved lists of food suppliers for individual installations. As food shipments arrive at the military installation, they are subject to even more inspection by military food inspectors. At the dining facilities, food handlers are required to undergo intense food safety training promoting the safe handling of food. At any time, Army or Air Force officials may condemn and remove food if found to be contaminated or pose a risk to human health.

Aside from food served in the dining hall, military personnel often have access to commercial food products through the Army and Air Force Exchange Service (AAFES). “One of the main missions of AAFES is to bring a taste of home to our forces,” said Army Lt. Col. Ronald Blakely, DVM, director of Food and Drug Safety/Defense for AAFES. “Everyone involved wants to be sure these items are safe.”

In addition to meeting USDA and FDA requirements, food shipped to AAFES facilities is subject to the same safety and defense requirements as all other

food products entering military facilities. Suppliers must be on the Worldwide Directory of Sanitarily Approved Food Establishments for Armed Forces Procurement or an individual Air Force base approved source list.

In the event a food safety warning or recall is issued, the DoD Hazardous Food and Non-Prescription Drug Recall System, better known as ALFOODACT, goes into effect. ALFOODACTs are detailed messages regarding the affected product or products and include specific actions to be taken to protect consumers. They are transmitted to every military facility, warehouse, commissary, or base where the product may be located. If need be, these products can be quickly removed from these facilities and consumers notified to return the products if they were purchased prior to the recall. Even if an ALFOODACT is not issued, military installations may place a “medical hold” on products found, or thought, to be contaminated or tampered with at a particular facility. The medical hold restricts access to these products until the issue is resolved.

While food safety protocols focus on foods considered at highest risk for accidental contamination, such as fresh vegetables or meats, food defense protocols require surveillance of the entire system for vulnerabilities that may allow for the intentional contamination of products from the suppliers of raw product all the way to the consumer. All food shipped to overseas outposts, regardless of prior inspection by the USDA or FDA, is re-inspected upon arrival for evidence of time temperature abuse or intentional contamination. The Army Veterinary Service also oversees a lab program to test food samples if there is any suspicion of contamination.

In short, the journey of food from farm to gate, and from gate to plate is long and difficult. Because of the diligence of these many different layers of protection, American fighting forces can trust the food they consume is as safe as it can be. A full state of readiness is essential to the effectiveness of any military force. In the U.S. food safety is, was, and remains an integral part of force readiness.





# HEALTH CARE IN AFGHANISTAN: BUILDING BRIDGES TO A HEALTHIER WORLD

By: Matt Pueschel, FHP&R Staff Writer

In an ongoing effort to work in a united fashion with other government agencies and international organizations to improve the health care sector of Afghanistan, the Military Health System (MHS) convened an important conference in mid-May called, “Building Health Security in Contemporary Afghanistan.”

Co-hosted by the National Defense University’s Near East South Asia Center for Strategic Studies, the conference brought together leaders from Afghanistan, DoD, the U.S. Agency for International Development (USAID), Department of Health and Human Services (HHS), the Department of State, international and academic organizations, and such coalition partners as the United Kingdom and Spain to discuss the important role health plays in establishing and sustaining security. Leaders also discussed the functions of the U.S. military effort to help build the health systems of conflict-stressed areas such as Afghanistan.

“Improving health and health care independence in other nations is just as critical to enhancing stability and preventing conflict as our other missions around the globe,” said Ellen Embrey, Acting Assistant Secretary of Defense for Health Affairs.

Since the U.S. became involved in health development work in Afghanistan, there have been dramatic improvements. In 2002 after the collapse of the Taliban regime, only 9 percent of Afghans had access to basic health services;

42 percent of child deaths were due to preventable causes; 25 percent of children died before age five; and the country had only 460 low-functioning health facilities.

Today, about 67 percent of Afghans have access to primary health services within a two-hour walk; there are 1,710 quality health care facilities; more than 90 percent of Afghan children have been immunized against polio; and tuberculosis (TB) cases are down 60 percent. Gloria Steele, USAID’s Acting Administrator for Global Health, called these improvements “tremendous.”

“Much needs to be done. Afghanistan still has the highest fertility and infant and under five mortality rate in Asia. Maternal mortality in Afghanistan is the second highest in the world. It remains one of only four polio endemic countries and one of 22 TB high burden countries.”

Dr. S. M. Amin Fatimie, Afghanistan’s Minister of Public Health, expressed gratitude towards the U.S. government, World Bank and the European Commission for supporting Afghanistan’s health and nutrition sector. “I strongly believe that development and security are two sides of the same kind,” he said. “I believe that we have to work on even greater engagement with each other in order to have many more achievements. The time has come to combine compassion with efficiency for the health and dignity of all Afghans. When people know that their clinic has not run out of medicine and they have

care, they are more likely to resist the Taliban. Our dream is to provide more support for the people of Afghanistan: health care for all.”

The U.S. military’s role in health capacity building in Afghanistan through the U.S. Central Command (CENTCOM) has been to develop the health care systems of the Afghan army and police. The U.S. military has embedded medical professionals that mentor Afghan military teams, and also has medical personnel on civil-military Provincial Reconstruction Teams that build sustainable capabilities at the community level. DoD has further helped the Afghan Military Medical School develop a standardized, competitive program. “U.S. military training and mentoring of the Afghan National Army and Afghan National Police has gone very well,” said CENTCOM Surgeon Brig. Gen. W. Bryan Gamble, MC, USA. “There is still a long way to go, but I think it’s started to progress to where they’re training individuals in such techniques as combat lifesaving, sanitation, and helping to start care early in intensive care units.”

Although the Department of State and USAID have the lead for developing the health care infrastructure in the civilian community and DoD leads the military-military medical mission, Brig. Gen. Gamble said he would like to see the military and civilian health care systems raised at relatively the same level at the same time. “That way you don’t have big discrepancies in standards of care,” he said.

Randolph Augustin, the health officer who oversees USAID's Afghanistan health program based in Kabul, said USAID is assessing potential steps that can be taken to improve coordination and synchronization of the different U.S. government interventions. "The challenges are that the different agencies are not structured to work in a coordinated fashion. Each agency has its own set of objectives and priorities, and ways of doing business," he advised. "We've contracted a group of consultants to help us look at how do we create mechanisms to streamline these processes so that we are able to coordinate without overburdening our different agencies."

The security situation in Afghanistan has impacted efforts. "It's definitely been a barrier to services," Augustin advised. "USAID supports service delivery in 13 of the 34 provinces. Out of those 13, seven are highly insecure provinces. What we've seen is while our contracts with NGOs have them running a certain number of clinics, because of insecurity we've had a certain number of districts where clinics are not able to operate at all."

While clinics have been forced to shut down after particular incidents in some districts, other clinics were unable to be staffed because Afghans did not want to work in insecure areas. Pharmaceuticals have also been taken by insurgents in some instances. "There is definitely a real challenge in those insecure areas. But we've also seen where working through community members, we are able to overcome a lot of these challenges," Augustin added.

Augustin said there have been cases where kidnapped health care workers or hijacked vehicles transporting pharmaceuticals were returned after community leaders negotiated with insurgents. Augustin said USAID is exploring with DoD and the other stakeholders how they can work differently in these highly insecure areas, and identify localized solutions.

Anne Cummings, director for the Asia Pacific region in the HHS Office



*U.S. Army (USA) Captain David Gann, treats a local Afghan boy with a wounded foot at a Village Medical Outreach (VMO) site, set up by Coalition Forces Soldiers to assist the people of Zaker-e-Sharif, Afghanistan, during Operation Enduring Freedom.*

of Global Health Affairs, said HHS operates a program focused on the Rabia Balkhi Maternity Hospital in Kabul as a model and teaching tool for improving emergency cesarean sections, post-partum care, and services to women, children, and expectant mothers. "We're very pleased with how that has gone," she advised.

HHS also collaborates with the World Health Organization (WHO) on polio eradication efforts and vaccinations, sending teams to Afghanistan to work on field epidemiology training to help Afghans build their capacity to monitor disease burden.

Cummings called the health sector development work in Afghanistan and the leadership of the Ministry of Public Health a "bright spot."

"It's been a real success story and is something that has made a huge difference, (but) there are still challenges about improving access to care," she said.

Afghanistan is a landlocked country. "We are really dependent on our neighbors to have access to the international market,"

Dr. Fatimie advised. "I hope that problems we have with our neighbors in our region will not create problems for the socioeconomic development of Afghanistan, particularly for health development in my country. However, I cannot ignore the fact that stability in Afghanistan also is related to stability in Pakistan, so if activities of insurgents in Pakistan are going to be controlled, if our other neighbors also cooperate, then without doubt socioeconomic development in Afghanistan will be accelerated."

DoD health stability operations to develop indigenous medical capacity were recently given the same priority as combat operations, per a Nov. 28, 2005 directive that also requires the department to work closely with other U.S. government agencies, foreign governments and NGOs in an integrated way in order to carry out such operations successfully. DoD's International Health Division is tasked with developing this policy, and has convened several forums over the past year that have focused on interagency health stability efforts in various regions including Iraq and Africa.



# DIRECTIVE BRINGS TOGETHER EMERGENCY RESPONDERS

By: Richard Searles, FHP&R Staff Writer

**W**hen and where the next disaster will strike is unknown. However, the nation has to be prepared for it to happen at anytime and at any place. Whether it's an anthrax attack in Atlanta or an earthquake in Escondido, CA, trained health care providers need to respond quickly and consistently. Homeland Security Presidential Directive (HSPD) – 21, “Public Health and Medical Preparedness,” directs that health and emergency response professionals, communities and individuals be prepared. The directive complements and further implements related requirements specified in the 2006 Pandemic and All Hazards Preparedness Act (PAHPA).

To prepare for health catastrophes, the directive stresses that emergency planners take a regional approach and coordinate across all levels of government. As most health care assets are privately owned, non-government entities need to be fully engaged. Communities and individuals are key participants as well in the process of readiness and resiliency. HSPD-21 advocates an effective response that is organized in a rationally designated system, where responders deploy in a coordinated manner, and people receive accurate and timely information.

In implementing HSPD 21 six Federal working groups were created, each focusing on major aspects and objectives of a public health and medical preparedness:

1. Biosurveillance-establishing a national epidemiologic surveillance system
2. Countermeasures distribution – providing needed medicines and supplies at the disaster site within 48 hours
3. Mass casualty care response - fielding assets and resources in a rapid, flexible, scalable, sustainable, comprehensive, well-coordinated, and appropriate manner
4. Community resilience – improving individual and family preparedness
5. Risk awareness – providing health threat information to individuals and communities
6. Education and training – developing core competencies and standards

Specifically on education and training, HSPD-21 led to the creation of the Federal Education and Training Interagency Group (FETIG). The FETIG coordinates activities and programming across the U.S. government related to education and training in public health and medical preparedness and response. The FETIG charter was signed in November 2008 by the Departments of Defense (DoD), Health & Human Services (HHS), Homeland Security, Veterans Affairs (VA), and Transportation (DOT). The FETIG participants also include the Department of Agriculture (USDA), Department of Labor (DOL), and

the Environmental Protection Agency (EPA). All of these agencies have a mission to train and educate responders to disasters. The FETIG held their inaugural meeting in December 2008 and has since developed its vision as “a nation educated and trained effectively to respond to medical and public health emergencies.”

“The ultimate function of the FETIG is to become a central platform for Federal partners to further integrate and synchronize myriad activities related to disaster medicine and public health preparedness,” said Capt. D.W. Chen, a DoD representative to the FETIG and its co-chairman. “Our mission is to advise on public health and medical education and training standards across government, academia, and private entities so that disaster medicine and public health core curricula contribute to an effective national response to all-hazards.”

By the end of September 2009, the FETIG intends to develop a stakeholder engagement strategy and participate in the drafting the National Health Security Strategy. By 2011, the plan is to promote and coordinate Federal activities to align disaster medicine and public health education and training core curricula to the National Preparedness Guidelines and the National Response Framework. Finally, within five years, the FETIG objectives include overseeing the establishment of a disaster medicine and public health education and training research program.

The FETIG serves as the coordinating mechanism for core competencies and education and training standards across Federal departments and agencies. The FETIG will build on previous Federal efforts to oversee the development of medical and public health disaster preparedness and response core competencies and will provide oversight to an academic joint program.

HSPD-21 directed the establishment of an academic joint program for disaster medicine and public health at a new National Center for Disaster Medicine and Public Health. In October 2008, an official charter was signed by the Assistant Secretary of Defense for Health Affairs creating the National Center for Disaster Medicine and Public Health at the Uniformed Services University of the Health Sciences (USUHS) in Bethesda, Maryland.

The National Center, as a permanent part of the University, will serve as the academic home to develop and propagate core competencies, training, research, and education related to disaster medicine, behavioral health and public health. The National Center will co-locate, whenever possible, the related specialties of domestic medical preparedness and response, international health, international disaster and humanitarian medical and public health assistance, and military medicine. The FETIG will provide advice and guidance to the new Center and its activities.

To complete all the provisions of HSPD-21 requires the assistance and collaboration of Federal agencies, state/local government, colleges and universities, and professional organizations at all levels. One of the first of many non-Federal partner

organizations that will be engaged is Yale New Haven Health System (YNH), a designated Center for Emergency Preparedness and Disaster Response.

“They (YNH) are working under a task order under USNORTHCOM to conduct a comprehensive study of public health emergency preparedness and medical disaster education and training programs available to practitioners currently in the workforce that require training as mandated through PAHPA and other regulatory and standards organizations,” said Capt. Chen.

Working together and with its partners, the FETIG and the new National Center will help steward creation of consistent medical and public health preparedness education and training programs that will serve to enhance our nation’s response to medical disasters.



# DCOE LAUNCHES REAL WARRIORS CAMPAIGN

By: Julie Hughes, Deputy Program Manager, Real Warriors Campaign  
Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury (DCoE)

**T**he Real Warriors Campaign is underway, an important and long-term effort to help warriors and their families get the help they need for psychological health and traumatic brain injury (TBI). Brig. Gen. Loree K. Sutton, Director of the Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury (DCoE), announced the launch of the effort in the spring.

The Real Warriors Campaign is a multimedia educational effort to combat the stigma associated with seeking care for psychological health and TBI. At the center of the campaign are the personal stories of warriors—told by them, in their own words that have sought and received help. By sharing their experiences, these warriors will encourage fellow Service members to seek the support they need and deserve.

“Going to war is an experience that goes beyond what most humans can even imagine,” said Brig. Gen. Loree K. Sutton, Director of DCoE. “The Real Warriors Campaign is designed to help tear down stigma, and make it easier for Service members to reach out for the treatment they may need after deployment.”

“Getting treatment is an act of courage and strength. With the Real Warriors Campaign, we’re going to make it easier for warriors and their families to ask for and receive the care they need and deserve,” said Dr. Sonja V. Batten, DCoE Deputy Director.



The Real Warriors Campaign will:

- Promote psychological resilience as a proactive readiness objective among military commanders and Service members.
- Communicate that effective treatments are available for psychological health concerns and traumatic brain injuries.
- Educate families about the resources available to them to help support their Service member or members and keep their families emotionally strong.

- Promote positive messages of Service members’ resilience and reintegration.

For more information about the Real Warriors Campaign, please visit [www.realwarriors.net](http://www.realwarriors.net).

If you have a question or concern about psychological health, relationships and/or traumatic brain injury, call the DCoE Outreach Center, which is open 24 hours a day, seven days a week. Masters-level trained coaches are available directly to assist you and your loved ones - the toll-free phone number is 866-966-1020. All calls are confidential.

**REAL WARRIORS ★ REAL BATTLES**  
**REAL STRENGTH**

Discover real stories of courage in the battle against combat stress.

**866-966-1020**  
[www.realwarriors.net](http://www.realwarriors.net)



## Q&A with Marine Corps Sgt. Joshua Hopper

*Sgt. Joshua Hopper, an active duty U.S. Marine, has more than five years of service. Hopper served two tours of duty in Iraq during Operation Iraqi Freedom (OIF) as an M249 squad automatic weapon (SAW) gunner. Hopper has also been deployed to Africa.*

*Hopper received a Purple Heart for injuries he sustained as a result of an Improvised Explosive Device (IED) during his second deployment to Iraq. Sgt. Hopper was recently accepted for Marine Corps Special Operations Command (MARSOC) training.*

**How was your life (family, career, etc.) different after you reached out for help and received treatment for post-traumatic stress disorder (PTSD)?**

**Hopper:** After I came home from spending three months in an in-patient program, my wife and I pretty much started our relationship over again, because for a year and a half there was no relationship. I was finally able to enjoy my kids. I had broken off communication with my parents, and now I try to keep up with them more.

As far as my career, reaching out and getting help for PTSD never affected it. I'd done nothing but advance before I got help, and after I got help it was pretty much, 'Are you good to go?' 'Alright let's get back to work.'

**Did you see a difference in yourself at work and at home before you reached out for help?**

**Hopper:** You put a mask on when you have PTSD. You aren't going to let anyone that you work with, or that you answer to, know that anything is wrong with you because you're afraid that you're going to be blacklisted. You're going to come home and take it out on the ones that are closest to you because ... you know ... they're going to forgive you over and over for it.

**No matter how big you are, how tough you may think you are, or how strong you are, if you have issues like these going on you have to swallow your pride.**

**What do you focus on in terms of recovery? Are there things that you have to focus on every day?**

**Hopper:** There are still situations that I avoid because I know how I'll react to them. I am probably going to go back to Iraq or Afghanistan soon. A year and a half ago, if I knew I was going back to Iraq or Afghanistan, I knew I wouldn't have been ready for it. Now, I know the steps that I need to take to be mentally ready to go over there.

**What do you want to say to other warriors who may be experiencing the same difficulties?**

**Hopper:** I try to tell Service members, 'Look at me. You should know that your chain of command wants to help you get the help that you may need.' A lot of Service members don't think that. They're thinking, 'I'm going to hinder my company, my battalion, whatever it may be. I don't want to get in the way or slow things down,' and it is definitely not that way.

**How did you make the decision to step forward and share your story with the Real Warriors Campaign?**

**Hopper:** The reason I stepped forward is that my in-patient program completely turned my life around. I walked into my commanding officer's office, shook his hand and said 'if you ever need anything ... please feel free to ask.' I said, 'I owe you a lot.' He looked at me and said, 'You don't owe me a thing, you've done your time, if you want to repay me, pay it forward.'

**What has this experience taught you?**

**Hopper:** I would say the biggest thing this experience has taught me is no matter what branch you're in, no matter how big you are, how tough you may think you are, or how strong you are, if you have issues like these going on you have to swallow your pride. Go get the help you need and do it before it's too late. Swallowing your pride isn't that bad of a thing, especially when it has to do with your psychological health and well being.

**If you were to deploy tomorrow, what would you do differently?**

**Hopper:** I would be looking out for the junior Marines, seeing how they're reacting to their situation. If one minute he's a happy-go-lucky Marine and the next minute he hasn't said a word to anybody in two days, you know something is definitely up. This time I'm going to see how it's affecting other people and then be able to help them from there.

# PROTECTING YOUR HEALTH: DEPLOYMENT OCCUPATIONAL AND ENVIRONMENTAL HEALTH SURVEILLANCE PROGRAMS

By: Kelly Kotch, FHP&R Staff Writer

The health of our Servicemen and women and other Department of Defense (DoD) personnel is the top priority of the DoD. A critical component of the DoD's Force Health Protection program is the deployment occupational and environmental health (OEH) surveillance program. The Services' OEH professionals work to anticipate, detect, and prevent any

hazardous exposures before they occur and they routinely monitor air, soil, water and other aspects of the environment for any possible hazards to Service members. To date, over 11,000 environmental samples from Iraq and Afghanistan have been collected and analyzed. The Services' OEH professionals have determined that the air, soil and water in theater overall have low risks for causing any long-term health effects. These risks are constantly reassessed.

This ongoing deployment OEH surveillance effort has successfully contributed toward the prevention of disease outbreaks and other illnesses affecting the men and women of our Armed Forces; weekly disease and injury rates are at their lowest levels in the

history of military medicine at 4 percent.

Service OEH professionals respond to reports of suspected occupational or environmental hazards that become evident. An example of their successful work is the investigation of possible exposures at Qarmat Ali Industrial Water Treatment Plant.

Sodium dichromate was used by the Iraqis at Qarmat Ali to prevent the corrosion of pipes used to inject water into oil wells to increase oil production. After looters entered the facility in 2003, they spread the sodium dichromate throughout the site. Some members of the Indiana, South Carolina, West Virginia, and Oregon National Guard were on site to provide protection to Kellogg Brown & Root (KBR) employees, who were responsible for the oil site and returning it to operational status. When KBR learned that sodium dichromate was present at the facility and that it presented a possible hazard, they notified U.S. Central Command (USCENTCOM) in Kuwait.

A request was immediately made for a U.S. Army Center for Health Promotion and



Preventive Medicine (USACHPPM) team to evaluate the site for contamination and to assess the health of the Service members who may have been exposed. Some members of the Indiana National Guard were believed to have had the greatest potential exposures based on the time they spent at the site, and over 130 of them were administered comprehensive physical examinations.

The USACHPPM team thoroughly reviewed all of the environmental monitoring data and the results of the physical examinations, and concluded that there was no indication of any elevated risks for long-term health effects, including cancer, based on the low levels of exposure that may have occurred. The Defense Health Board, an esteemed group of medical experts and scientists from academia and other civilian institutions, supported this conclusion.

The Services' OEH professionals are in theater to protect your health and safety, and they work with commanders to eliminate hazardous exposures whenever possible. If, however, you believe you may have been harmed by any occupational or environmental health hazard, you should report the incident to your leadership, and seek prompt treatment at a Military Treatment Facility.

### **What is sodium dichromate?**

Sodium dichromate is a chemical compound that looks like a red-orange salt. It is commonly used in leather tanning, in manufacturing of dyes and inks, as an oxidizing agent or as a corrosive inhibitor in industry, including oil well operations in some parts of the world.

### **How can you be exposed?**

Sodium dichromate can enter the body by inhalation, ingestion, or absorption through the skin. The most common methods would be through the lungs and skin.

### **Have any Service members been exposed to it?**

Yes, there have been some exposures at low levels. In Iraq, sodium dichromate was used at the Qarmat Ali Industrial Water Treatment Plant to prevent the corrosion of pipes at the facility. This water was used for the production of oil, not for drinking water. After looters entered the facility in 2003, sodium dichromate was spread throughout the site. Some members of the Indiana, Oregon, West Virginia and South Carolina National Guard came into contact with sodium dichromate while providing security to contractors working at the site.

***An individual's reaction to sodium dichromate will differ based on how you may have been exposed, and of course, how much of the chemical you may have been exposed to.***

After extensive testing of the environment and comprehensive medical assessments by the U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM) of members of the Indiana Army National Guard (the unit that spent the most time at the site), it was determined that there were no risks identified for any long term health conditions, including cancer. The Defense Health Board also supported this conclusion.

### **What are the adverse health effects?**

Sodium dichromate is classified as a human carcinogen. Depending on how much of the substance one is exposed to, it can destroy the tissues of the mucous membranes in the nose and upper

respiratory tract. The primary health concerns from long-term workplace exposure are lung cancer, asthma, and damage to the nasal epithelia and skin. Individuals with asthma or other pulmonary diseases are highly sensitive to sodium dichromate.

An individual's reaction to sodium dichromate will differ based on how you may have been exposed, and of course, how much of the chemical you may have been exposed to. If it is swallowed, sodium dichromate can cause severe burns of the mouth, throat, and/or stomach, potentially leading to death. Skin contact with sodium dichromate may lead to redness, pain, and a severe burn. If sodium dichromate gets in your eyes, it can cause blurred vision, redness, pain and/or severe tissue burns. Inhaling the chemical may result in a sore throat, coughing, shortness of breath, and labored breathing.

### **What medics do to treat it?**

Treatment is centered on the symptoms that exposed personnel may have. After any initial treatment for exposure has been given, medical professionals will do a full medical examination of your blood, urine and lungs to determine if any long term effects would be expected.

### **How does the U.S. military prevent sodium exposure?**

The Military Services' occupational and environmental health (OEH) surveillance program monitors the air, water and soil in theater to detect any potential hazards to our Armed Forces both at our permanent installations and while deployed. If an environmental hazard is detected, all necessary measure will be taken to characterize the health risks, to prevent exposure and to ensure personnel are medically evaluated and treated.

# DENTAL HEALTH FOR ALL AGES



Dr. Patrick D. Sculley, D.D.S. (U.S. Army, Major General, Retired)

**D**ental experts recommend that the first oral examination should occur at the time the first tooth appears but not later than the age of one year. This examination should be the first in a life-long series of regular dental visits. Over the life of an individual the areas of focus will change to reflect his or her changing needs, but the underlying purpose remains constant: to preserve healthy teeth and gums for life. Below is information about the “normal” areas of focus and treatment at different stages of life; however, disease processes and abnormal development can occur. Nonetheless, the best way to detect the abnormal is through a regular dental exam.

The first examination of a young child will include guidance for the parents or caregivers. Instruction on diet and proper oral hygiene will be provided. The development of the baby teeth, which will appear over the first two years of life, should be discussed. Of particular note is the importance of informing the parents of the dangers of “baby bottle caries” (tooth decay). This condition usually occurs when the child is put to sleep with a bottle containing sugary liquid. Baby bottle caries can ruin the baby teeth. Fortunately it can be easily prevented with good oral hygiene and wise feeding habits. As a further preventive measure the dentist may prescribe fluoride supplements when the water supply is not adequately fluoridated.

During the toddler and pre-school years exams should focus on the preservation



*Army Dentist Capt. Rajesh Sondkar (left) watches as Spc. Jamie McKay washes and suctions a patient's mouth during a Dental Readiness Training Exercise during New Horizons '05 in Macaracas, Panama, on April 15, 2005. DoD photo by Kaye Richey, U.S. Army.*

of the baby teeth. The teeth will be examined for early signs of decay and treated as necessary. Unfortunately, a recent report from the Centers for Disease Control indicates that decay is on the rise in children aged 2 to 5. The dentist or hygienist will provide guidance to the parents or caregivers on teaching their child good oral hygiene even though adults should continue to help the child with oral care into the school years.

The elementary school years coincide with the development of the “mixed dentition”, a time when baby teeth

and permanent teeth coexist. The first permanent molars come in at about the age of six. Examination may disclose the need for sealants to prevent decay on the biting surfaces of the molars and the other back teeth which will appear between ages 6 and 12. When the pits and fissures on the teeth are deep, tooth decay may occur soon after eruption even with appropriate diet and hygiene. Therefore, regular exams are exceedingly important for the prevention of decay during this age period. It is also important to monitor the timing and sequence of the loss of the baby teeth and appearance of the permanent



teeth. Interventions may be required to prevent crowding and facilitate the development of proper alignment and “bite”. Often children begin to participate in organized athletics during the early school years. If these activities have the potential for injury to the face and mouth, a mouth guard should be constructed.

During the middle school years cavities can become a greater problem as children have more control over their diet. The dental team should continue to provide reinforcement of proper hygiene and diet and provide treatment for cavities as necessary. At this stage some children will require orthodontic treatment (braces) to straighten their teeth. This period is also a good time for a frank discussion between dentist, patient, and parents about the negative effects of tobacco and oral jewelry. Also during this period gum disease begins to occur with increasing frequency. Some youngsters will get gingivitis (inflammation of the gums) during puberty due to the interaction of fluctuating hormone levels and dental plaque. Fortunately, time and good hygiene will cure this condition.

In the high school years and into early adulthood concerns continue to include tooth decay and gum (periodontal) disease. The regular reinforcement of a message of prevention including candid discussions about risky habits continues to be extremely important. At about the age of 18 the third molars (wisdom teeth) come in. Occasionally the area around these teeth can become infected

or they may only come in part way or not at all. This may mean removing them to prevent further infection or other serious problems.

If regular preventive and treatment services have been a part of the individual’s childhood, the adult years will

***If regular preventive and treatment services have been a part of the individual’s childhood, the adult years will be reached with few problems, healthy teeth, and a winning smile.***

be reached with few problems, healthy teeth, and a winning smile. However, many adults will face an increasing risk of gum disease. Dental examination will thus include screening for gum disease and treatment if necessary, but prevention through good home care remains the best strategy. The increasing evidence of an association between gum disease and other conditions such as diabetes, cardiovascular disease, and pre-term delivery highlights the importance of periodontal health.

Modern dentistry provides many techniques for the enhancement of the

appearance of the teeth. Some people will seek cosmetic dental services to create that “perfect smile”. Such treatment should be undertaken only after a thorough discussion between dentist and patient concerning the expected outcomes, time involved, costs, maintenance, and risks. A truly informed patient is in partnership with the dentist, a collaboration that will produce the best results.

As one reaches the mature adult years systemic medical conditions may compromise health. Every oral examination should include a review of the health history and medications taken, even non-prescription items. The mouth is the mirror of the body and the dentist may detect systemic disease or note changes in the progress of disease. Additionally, medications can result in oral complications or affect the body’s response to oral disease. A classic example is dry mouth (xerostomia), seen in several disease states and with several medications. The dentist will be able to note this condition and can make recommendations which will relieve symptoms.

At every stage of life dental services are necessary. The focus of the examination and treatment may change with age, but the basics of good home care, proper diet, and the avoidance of bad habits remain a constant. Good dialogue between the dentist and the patient is the starting point in achieving oral health and a winning smile for life.

# MHS TECHNOLOGIES SHOWCASED IN PRESIDENTIAL CLASSROOM

By: Matt Pueschel, FHP&R Staff Writer

**F**orce Health Protection and Readiness (FHP&R) hosted more than 40 U.S. and international high school students from the Presidential Classroom and introduced them to an array of cutting edge health care technologies that have emerged from the Military Health System (MHS).

The March 3, 2009 visit featured interactive demonstrations of mobile combat casualty care platforms and a display of the most advanced prosthetics that allow recuperating Service members to return to active lifestyles. “I was pleased and impressed it was such an international group,” said Matthew E. Hanson, PhD, Vice President of Business Development for Integrated Medical Systems, Inc., who led a demonstration of the Life Support for Trauma and Transport (LSTAT). “There was value in communicating to them the big role the military has played in health care for everybody (including the civilian sector). I was really impressed by the engagement of the students. They were a really inquisitive, creative group.”

The interactive demonstrations spanned the range of applied MHS technologies, from medical evacuation and portable continuous treatment to post-surgical rehabilitative care. “One of our major jobs is to help people transition back to a normal life,” said Col. Donald L. Noah, D.V.M., USAF, Acting Deputy Assistant Secretary of Defense for FHP&R.

Students were presented with interactive demonstrations of the LSTAT and the MedEx 1000, which each provide



mobile, continuous integrated health care. “We had them lie down on the LSTAT so they could get a sense of what a combat casualty feels like,” said Hanson. “We measured their blood pressure, and blood oxygen level with a finger clip. Their data showed up on a screen and handheld device being passed around so other students could see. With the MedEx unit, we also hooked up non-invasive sensors and measured the health of the heart.”

Hanson said the LSTAT G5 is essentially a portable hospital designed to monitor trauma casualties and administer medications and fluids. It is used in clinics, combat support hospitals, battalion aid stations, transport helicopters and evacuations from ships. LSTAT is currently fielded by the

U.S. Army and Navy, and eight other countries. The smaller MedEx 1000 life support model, which is designed for non-trauma patients requiring ventilation, physiologic monitoring, fluid infusions or warmers, was cleared by the FDA last fall.

Students were further shown the latest advances in prosthetics, including electronically powered knees and high impact shock systems that allow amputees to return to normal, active lifestyles. John Warren, a Prosthesis Technology Specialist from the Integrated Department of Orthopedics and Rehabilitation at Walter Reed Army Medical Center/National Naval Medical Center, showed students a broad range of prosthetics and explained how he works with wounded Service members



with lower extremity limb loss to create state-of-the-art individualized sockets that make the valuable connection of the prosthetic to the patient. “I make these things by hand at Walter Reed. Sometimes I think it’s magic,” Warren said.

Warren, who decided to enter the prosthetics field about 15 years ago after he lost a leg in a scuba tank explosion, said Walter Reed has a huge team dedicated to taking care of each patient. Comfort, functionality and appearance are the three keys in fitting each patient to a prosthetic. He showed slides of some of his below-knee amputee patients inline skating and swimming with prosthetics. Two bilateral lower extremity amputees were also shown running and playing basketball with prosthetics. Warren said special shock absorbent prosthetics allow patients to mountain bike, ski and engage in other high impact activities. “My job is actually incredibly gratifying, to help these guys get back to doing this sort of stuff,” he said.

One such patient is U.S. Army Sgt. 1st Class Patrick A. King, who suffered an amputation of his left foot in Iraq on Oct. 20, 2007 after his vehicle was struck by an explosive ordnance. He told students how he was discharged from the hospital after only four days. “I was walking by Thanksgiving,” he said. “It didn’t really take anything from me, except physically. It doesn’t change anything. It’s just a tad bit different.”

Warren said his approach is patterned after a sports medicine model in which patients are viewed as tactical athletes.

He said about 12 percent of Service members who have suffered major amputations from the wars are able to stay on active duty. He demonstrated various models to the students, such as the “cheetah foot” that enables amputees to run at high speeds, carbon fiber feet that can return 90-95 percent of an amputee’s effort (a human foot can return 250 percent), an electronic hand that has the ability to read muscles, and prosthetics with high definition life-like silicone covers.

***Comfort, functionality and appearance are the three keys in fitting each patient to a prosthetic.***

Warren also demonstrated how he uses his own C-Leg that is electronically powered through microprocessors. “The beautiful thing about the C-Leg is you can’t fool it into not supporting you,” he said. “My weight helps me activate it, whereas hydraulics in other prosthetics uses the swing motion.”

Warren said prosthetics that allow ankle movement are being developed for the future, and the Defense Advanced Research Projects Agency (DARPA) is

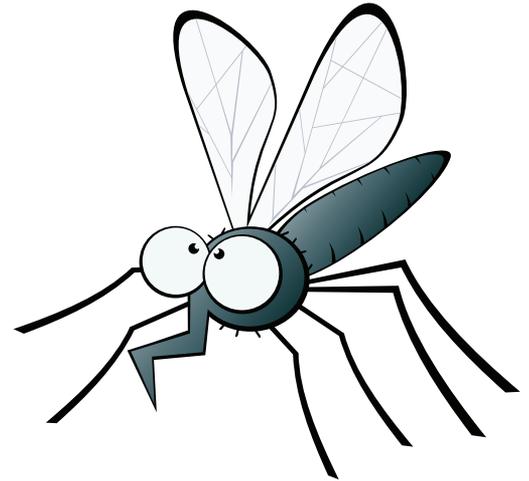
developing an entire arm replacement through research into targeted muscle iteration in which electrodes placed into the central nervous system may give control back to the upper arms. The potential use of stem cells in muscle and tissue regeneration is also being researched by DoD. “It’s just about the care,” King said. “If you come in with a good mindset, it’s almost cake. In six months, I was up and running. You can’t let this beat you down.”

The Science, Technology & Public Policy Program was sponsored by Honeywell Hometown Solutions and Presidential Classroom, which is a non-profit civic educational organization that was founded in 1968. Its science program involved 282 participants in a weeklong visit March 1-8 to Capitol Hill and various government agencies throughout the Washington, D.C., area. The March 3rd visit to FHP&R involved 41 students and four instructors.

Student Anna Kuisma, of Finland, said the FHP&R visit was really interesting. Student Katie Ardoff, of Va., said she didn’t realize the military plays such a strong role in health care. Student Alexander Rivera, of Arizona, said the technology developments and applications were fascinating to see. “It’s really important to show the youth what’s happening and show us and involve us,” added Anthony Palacios of Illinois.

# MOSQUITO REPELLENT: NATURAL REMEDIES PROVIDE EASY SOLUTIONS

By: Rochelle Olivieri-Spain, FHP&R Guest Writer



**F**inally, summer is here! Backyard barbecues, pool parties and yes, the dreaded mosquito. I couldn't help but ponder the possibilities. Do mosquitoes carry disease? Can I become infected by flu via a mosquito bite? How do I protect myself? After a bit of research, which included reports from the Centers for Disease Control (CDC) and World Health Organization (WHO), I decided that the only course of action, for me, is prevention. So I set out to find a non chemical solution to prevent bites. Before I get into methods of prevention, I'd like to share some information about mosquitoes.

These insects have been in existence for more than 30 million years. Mosquitoes are equipped with:

- **Chemical Sensors**—mosquitoes can sense carbon dioxide (mammals and birds give off these gases as part of normal breathing) and lactic acid for up to 100 ft.
- **Visual Sensors**—wearing clothing that contrast with backgrounds, and moving around in that type of clothing helps mosquitoes see and zero in on you. (if it's moving it must have blood)
- **Heat Sensors**—Mosquitoes can detect heat, so finding warm blooded humans is easy, if they get close enough.

In some parts of the world mosquitoes are considered a threat to human survival. We have been told and studies

have been conducted to prove that the "human immunodeficiency virus (HIV) that causes AIDS cannot survive in a mosquito and therefore cannot be transmitted from one person to another through mosquito bites."

On the other hand, studies have also proven that some mosquitoes can carry diseases such as Malaria and the West Nile Virus.

Some believe that the only way to confuse mosquitos' chemical receptors is by using a mosquito repellent that contains NN-diethyl-meta-toluamide (DEET). Others believe the only way to deter these pesky creatures is by using Avon's Skin So Soft. I, on the other hand, believe the best way to deflect/confuse mosquitoes without the use of chemically based repellents is by using easy to prepare, home remedies. Aside from basic common sense moves like removing all standing water from the immediate vicinity, listed below is a few of my (and grandmas') favorite home remedies:

1. Take onion skins (the mess that's left after the onions are gone) add a drop or 2 of dish detergent and mix with water. Pour into a spray bottle and viola! You have a natural bug/mosquito repellent. With this harmless and effective concoction you can spray anywhere and everywhere.
2. Mix a few cups of water with some vanilla and pour into a spray bottle. Spray yourself before going outside. Mosquitoes hate the smell.

3. (I've never tried this one) Place a few dryer sheets under the chair you'll be sitting in or pin a few on your clothes while you're outside. The dryer sheets have a repelling effect on mosquitoes and yes, they hate the smell.
4. Spritz yourself with lemon eucalyptus oil, which you can buy from a health food store. Put five drops of oil in 2 cups of water, then put the mixture in a spray bottle and give yourself a few good sprays before going outside. Again, they hate the smell.

As with almost any issue, preparation can greatly reduce the risk of being bitten. Always keep in mind that mosquitoes need water to breed. Your very first course of action should be to remove standing water from all sources (old tires, planters, buckets, rain barrels, cemetery urns, etc.)

Its important to remain cognizant of your surroundings, especially when engaging in outdoor activities. If you've been bitten by a mosquito and you're experiencing fever, chills, nausea, dizziness, headaches, or muscle aches, see your physician immediately. You may or may not be having an allergic reaction.

 **Want More?**  
[www.CDC.gov](http://www.CDC.gov)

## RESOURCES

### Force Health Protection and Readiness

FHP&R

[fhp.osd.mil](http://fhp.osd.mil)

Deployment Health and Family Readiness Library  
[deploymenthealthlibrary.fhp.osd.mil](http://deploymenthealthlibrary.fhp.osd.mil)

GulfLINK

[www.gulflink.osd.mil](http://www.gulflink.osd.mil)

DeployMed ResearchLINK

[www.deploymentlink.osd.mil/deploymed](http://www.deploymentlink.osd.mil/deploymed)

Post-Deployment Health Re-assessment

[fhp.osd.mil/pdhrainfo/index.jsp](http://fhp.osd.mil/pdhrainfo/index.jsp)

### Military Health Systems

[www.health.mil](http://www.health.mil)

### TRICARE

[www.tricare.osd.mil](http://www.tricare.osd.mil)

### DoD Deployment Health Clinical Center

(866) 559-1627

[www.pdhealth.mil](http://www.pdhealth.mil)

### Department of Veterans Affairs

(800) 827-1000

[www.va.gov](http://www.va.gov)

### DoD Mental Health Self-Assessment Program

<https://www.militarymentalhealth.org/test>

### Defense Centers of Excellence

[www.dcoe.health.mil](http://www.dcoe.health.mil)

### United States Central Command

[www.centcom.mil/](http://www.centcom.mil/)

### Automated Neuropsychological Assessment Metrics

[www.dvbic.org](http://www.dvbic.org)

[www.armymedicine.army.mil/prr/anam.html](http://www.armymedicine.army.mil/prr/anam.html)

### Military OneSource

[www.militaryonesource.com](http://www.militaryonesource.com)

### After Deployment

[www.afterdeployment.org](http://www.afterdeployment.org)

### ARNG DOH

[www.decadeofhealth.com](http://www.decadeofhealth.com)

### NATIONAL SUICIDE PREVENTION LIFELINE

1-800-273-TALK (8255)

### Defense Centers of Excellence

[www.dcoe.health.mil](http://www.dcoe.health.mil)

For a subscription to Force Health Protection and Readiness Magazine, please write to [FHPWebmaster@tma.osd.mil](mailto:FHPWebmaster@tma.osd.mil), or

TRICARE Management Activity

Five Skyline Place, Suite 810

(CODE FHP&R)

ATTN: FHP&R Magazine

5111 Leesburg Pike

Falls Church, VA 22041

## Have a story idea?

FHP&R is looking for interesting stories about health-related topics. Please submit ideas and stories to [FHPWebmaster@tma.osd.mil](mailto:FHPWebmaster@tma.osd.mil).

