

ONE HEALTH

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U.S. Army Public Health Command

Summer 2014

▶ Nonionizing radiation and health

PLUS:

- ▶ Public health partnerships
- ▶ Performance Triad kickoff

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(COVER) Bryan Kobe, electronics engineer in the USAPHC Nonionizing Radiation Program, in an anechoic chamber, a room designed to completely absorb reflections of radio-frequency electromagnetic waves. The chamber is located at the U.S. Army Public Health Command at Aberdeen Proving Ground, Md.

contents

FOCUS

- 3 Partnerships enhance Army public health
- 5 Public Health Command promotes sleep, activity, nutrition during Performance Triad kickoff week

UPDATES

- 7 News and notes from around the command

MISSION

- 10 Farmers markets offer healthy choices to Soldiers and families
- 12 Army invention helps prevent mosquito-borne disease
- 14 Medical Cost-Avoidance Model demonstrates value of prevention
- 16 Nonionizing radiation can affect health

PEOPLE

- 18 Public Health Command employee enjoys unique opportunities in leadership development program
- 20 Employees honored



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Partnerships enhance Army public health

JANE GERVASONI
EDITOR



AS A GLOBAL COMMAND, the U.S. Army Public Health Command is developing partnerships with organizations to help create healthy communities by collaborating in areas of shared interests.

“Many of our military families as well as our Army civilian families live outside the installation gates,” explained Maj. Gen. Dean G. Sienko, USAPHC commander. “By partnering with local public health organizations we can build relationships with academic communities, sister public health organizations and others that will benefit our unique populations as well as our local communities.

“My visits to the Johns Hopkins University Bloomberg School of Public Health, the U.S. Centers for Disease Control and Prevention, the National Association of County and City Health Officials and other organizations demonstrate our commitment to synchronize Army public health into the efforts of other public health agencies,” Sienko said.

The mission of the USAPHC is to promote health and prevent disease, injury and disability of Soldiers and

Maj. Gen. Dean G. Sienko, commander U.S. Army Public Health Command, and Dr. Thomas Frieden, director, U.S. Centers for Disease Control and Prevention, Atlanta, discuss opportunities for collaboration. (Photo courtesy of Charles Lyon)

military retirees, their families and Department of the Army civilians. Many other organizations, such as local health departments and the CDC have similar missions but focus on different populations.

“These organizations are engaged in public health activities that have implications for our command,” explained Sienko. “We have goals on a global scale that are shared with these sister organizations.”

Epidemiology, disease surveillance, injury prevention, and environmental and occupational health are just a few of the areas common to organizations that focus on public health.

“Other public health organizations could benefit from our knowledge in these areas as well. In this way, health lessons learned from our military personnel can be shared with other organizations,” said Sienko.

Partnering with other public health organizations also fits into the Army surgeon general's "System for Health" initiative, which focuses on shifting Army medicine to preventing disease and injury.

The USAPHC is the Army medicine organization with the capability to drive that transformation.

"As the premier military public health organization, it is important that we find opportunities to share knowledge and work together to develop fresh approaches to public health concerns," according to Sienko. "These partnerships will help us showcase our expertise and our abilities."

Sienko offered one example for collaboration with military and civilian public health teams.

"In the military, we have a population that can be studied—we can look at young recruits just entering basic training. About 18 percent of these recruits used tobacco products when they came into the military," he said. "During their two to three months of basic training, they can't use tobacco products. So how do we encourage them to continue this pattern after basic training is over?"

One route to answering that question is to draw on the experience of other public health experts.

"By collaborating with the CDC, which has many of the same tobacco prevention goals, we may be able to help Soldiers stay away from tobacco once they finish basic training," he said. "This is just one possible tangible benefit of partnerships."

Sienko believes there are other benefits for the Army Public Health Command and for its public health partners.

"Our recent memorandum of understanding signed with the Johns Hopkins University recognizes their unique resources within the university and its Bloomberg School of Public Health," said Sienko. "We are looking forward to peer-to-peer collaboration and learning opportunities as well as the possibility of recruiting interns and students to enhance our workforce."

Plans continue to build on existing relationships and forge new ones.

"Because Soldiers, their families and Army civilians usually live off post, our collaborations with local health departments, academia and others will help us to reach out to our populations where they live, as well as where they work," Sienko pointed out. "Our efforts will enhance opportunities to stay healthy and to share health related information."

Opportunities to include local health department officials as members of Army Community Health Promotion Councils also will enhance services available to the military population as well as encouraging collaboration with local communities to keep them informed in the event of public health emergencies, he added. ▲

Dr. Michael Klag (third from left), dean, Johns Hopkins Bloomberg School of Public Health, Baltimore, Md., and Maj Gen. Dean G. Sienko, commander, USAPHC, celebrate the signing of a memorandum of understanding between the USAPHC and the Johns Hopkins Bloomberg School of Public Health. John J. Resta (right), director, Army Institute of Public Health, and other Hopkins leaders look on. (Photo courtesy of Shiv Gandhi/homewoodphoto.jhu.edu)



Public Health Command promotes sleep, activity, nutrition during

Performance Triad kick off week

CHANEL S. WEAVER
PUBLIC AFFAIRS OFFICE

It's not every day that one can convince more than 80 employees from the U.S. Army Public Health Command to voluntarily report before sunrise, but that's exactly what occurred on the morning of June 4.

On this particular day, these employees, clad in their diverse workout attire, showed up for a "Fun Run"—which consisted of a two-mile walk or five-kilometer run at the Edgewood Area of Aberdeen Proving Ground, Md. The day was special because it was part of the Performance Triad kickoff week, an Army medicine initiative to motivate individuals to focus on three components that build and sustain individual health and unit readiness—sleep, activity and nutrition.

Although some may grimace at the thought of getting up so early to work out, these public health staff members saw it as an opportunity to take charge of their own good health.

"It's a real treat for me to be here," said Heather Sands, who works in the command's

G-2 office. "Many aspects of my job require me to be sedentary, and it feels good to get active and breathe the fresh, crisp air."

Public Health Command employees were not the only individuals who showed up for the early morning walk.

Maj. Beth Sprangel, formerly of the U.S. Army Medical Research Institute of Chemical Defense, was also in attendance. She and Rebecca Benisch, a veterinarian who serves as a USAPHC food safety specialist, walk together most days.

"If you can fit activity into your day and with your friends, it is a win-win for physical and mental health," said Sprangel. "I am delighted to be here and give my support."

After receiving words of encouragement from both John J. Resta, director of the USAPHC's Army Institute of Public Health, and Lt. Col. David Bowerman, USAPHC chaplain—as well as a safety brief from USAPHC 1st Sgt. Mahlon Thomas—the participants were on their way.

At the conclusion of the Fun Run they enjoyed healthy snacks to emphasize the importance of refueling after strenuous exercise.

Many of the participants also received water bottles to show the importance of



John J. Resta, director of the USAPHC's Army Institute of Public Health, explains why adequate sleep, activity and nutrition are vital to sustaining a healthy lifestyle. (USAPHC photos by Graham Snodgrass, Visual Information Division)

staying hydrated, hand sanitizers to remind them to wash their hands frequently, and many pamphlets that addressed all aspects of healthy living.

The Fun Run was not the only activity held for the kickoff. USAPHC employees also had the opportunity to attend a class on developing healthy sleep habits.

"Getting a good night's sleep is really tougher than you think," said Resta. "It requires discipline and a commitment to ensure that your body and mind are adequately refreshed. When I am successful at getting enough sleep, I notice that I feel better and have more energy."

Another aspect of the week's activities allowed USAPHC employees to attend an open house at the Edgewood Area Army Wellness Center Annex to learn about the free services offered at the AWC that can help individuals attain a healthy lifestyle.

AWCs are a key element in the Army surgeon general's long-term strategy of refocusing Army medicine from a healthcare system to a system for health by emphasizing primary prevention, which means stopping diseases and chronic conditions before they start. AWCs directly support the Performance Triad. They offer six core programs including health assessment review, physical fitness, healthy nutrition, stress management, general wellness education and tobacco education. Each of these programs is based in science and uses the highest sports medicine, fitness training and health standards to help Army military and civilian personnel create environments where healthy behavior can take place.

Although the Performance Triad kickoff week was only five days, it is the hope of the USAPHC that employees will continue to incorporate healthy habits into their lives.

"A healthy lifestyle is not something that happens in the doctor's office or a clinic—it starts with you, and health is determined by your day-to-day decisions," said Resta. "Sleep, activity and nutrition are vital components to healthy living." ▲

NEWS AND NOTES FROM AROUND THE COMMAND

The Deployment Environmental Surveillance Program provided detailed sampling and analysis in Kandahar and Kabul, Afghanistan, following a September 2013 air surveillance mission to Bagram. When DESP air sampling experts returned to their home bases at the Army Institute of Public Health and Public Health Command Region–North, they left a trained cadre and almost a ton of sampling equipment behind. Local preventive medicine personnel used both to conduct a comprehensive sampling mission that should yield a more complete picture of air quality in the Kandahar region. In February 2014, another team from AIPH and PHCR–North deployed to conduct the assessment of Kabul.

"Because of the geographic and meteorological conditions, the Kabul Valley periodically appears visually polluted to Soldiers who are stationed there, and they have expressed concern," said John Kolivosky, environmental engineer and DESP project manager. "It is also located in an area of Afghanistan where much of the industry and military operations take place, and Kabul is widely reported in the media as one of the world's most polluted cities."

While preventive medicine detachments routinely conduct air sampling, DESP supplied more specialized equipment capable of capturing a wider range of chemicals and compounds. Results from the sampling will be analyzed by the AIPH laboratory and reported to medical experts in Afghanistan, along with any recommendations for improving air quality.

Public Health Command Region–West Laboratory Sciences Division had its initial surveillance inspection by the American Association for Laboratory Accreditation May 8. The lab's quality and technical systems were reviewed

and received only one minor deficiency, which was quickly corrected. The lab is now in full compliance with A2LA requirements.

Capt. Richard Brooksby, Public Health Command Region–West, stationed at Beale Air Force Base, Calif., earned the Expert Field Medical Badge April 17. Brooksby competed at Joint Base Lewis–McChord, Wash. **Sgt. 1st Class Jason Sweeney** and **Spc. Thomas Laswell, USAPHC Headquarters and Headquarters Company**, and **1st Lt. Christine Argueza, PHCR–North**, also earned the EFMB April 2 at Fort Dix, N.J.

The Remote Online Veterinary Record is now deployed worldwide, and improvements to some of the minor program glitches are already being addressed. Installation network and infrastructure issues have caused some delays in customer service, which are being addressed at the local level. Since fielding in early May, the veterinary treatment facilities are approaching the 120,000 mark for clinical encounters stored in ROVR. In fiscal year 2013 VTFs had more than a half million outpatient visits.

Chief Warrant Officer 4 William Warren and Master Sgt. Lennard Bookman, Veterinary Services Portfolio, led the Prime Vendor Destination Auditor course at Joint Base San Antonio, Texas, May 12–17. The course provides advanced training in poultry, processed fruits and vegetables, red meats, and seafood that enables veterinary food inspectors to better monitor the safety and quality of Prime Vendor foods. The program also collects quality data on food served under troop feeding programs, verifies the condition and wholesomeness of foods delivered under the program, and contributes to food vulnerability/defense monitoring.

PHCR–West held a change of responsibility ceremony May 28 at Joint Base Lewis–McChord, Wash. Command Sgt. Maj. Richard Silvia became the senior enlisted advisor at PHCR–West, taking over for Sgt. Maj. Gustavo Gurrola. This position and similar positions at other USAPHC region commands were transitioned to command sergeant major billets.

The PHCR–North change of responsibility ceremony was held June 23 at Fort Meade, Md. Command Sgt. Maj. David Galati took responsibility as senior enlisted advisor from Sgt. Maj. Craig Davis. Davis has been selected as an Army fellow to the chief of staff of the Army’s Strategic Studies Group.

PHCR–Europe veterinarians remind people moving to the U.S. this summer that they may take most types of pets with them if they plan ahead. Endangered species laws prevent people from taking some turtles, birds and reptiles to the U.S.

“Dogs must be free of disease and be vaccinated against rabies at least 30 days before they reach the USA,” said Mike Dean, director of the U.S. European Command’s Customs and Border Clearance Agency. “Puppies younger than 3 months and dogs in rabies-free areas such as the United Kingdom are exempted, however,” he added. “Unvaccinated dogs will be inoculated on arrival and confined for 30 days at the owner’s expense.”

Every pet needs a signed veterinary health certificate that is valid for 10 days for all flights, commercial or military; it must be issued within 10 days of arrival to the U.S. This can be done on base by appointment only, or off base with a local-national veterinarian. Cats must show no signs of disease, and rabies vaccination is required in most states. Contact the local veterinary treatment facility for import requirements to all other countries as early as possible.

Those wanting to ship pet birds should consult the U.S. Department of Agriculture website at www.aphis.usda.gov/wps/portal/aphis/ourfocus/importexport.

For more information from the “Pets, Wildlife” pamphlet on shipping pets and endangered species, visit a military customs office or consult the U.S. European Command’s Customs and Border Clearance Agency website at www.eur.army.mil/opm/customs/pets.htm.

Valerie Adams, biologist in the Toxicology Portfolio and Triservice Toxicology Consortium microbiome representative, attended a National Institute of Environmental Health Sciences Exposure Sciences webinar May 15. The webinar series focuses on new ways for scientists and doctors to measure a person’s or a population’s exposure to a chemical. Biomarkers are a measurable indicator of health or disease and are most recognizable as the read-out of blood and urine tests (as in tests for diabetes). New biomarkers for diseases caused by chemical exposure are being discovered often. Recently, the importance of having “good” bacteria in one’s intestines and on one’s skin has been recognized. Collectively called the “microbiome,” these microscopic passengers are beneficial to one’s health. Since much of the microbiome lives in the intestines (or gut), understanding the toxicity of chemicals, especially ingested ones, is important for maintaining overall health. Biomarkers for the microbiome are being developed. The USAPHC Toxicology Portfolio is monitoring the progress of these biomarkers and is interested in the potential utility of microbiome effects as early indicators of chemical exposure.

The Occupational Health Sciences Portfolio continued to conduct lead-exposure monitoring for the U.S. Army Special Operations Command. Portfolio members conducted personal and area air sampling during exercises, particle size-selective sampling during exercises, surface wipe samples in administrative areas and in shoot houses, and hand and face wipe samples. Results were briefed to instructors. Members of the survey team are from the Industrial Hygiene Field Services Program and PHCR–North.

First Lts. James Frey and Havilah Gates, OHS Portfolio Health Physics Program, are conducting radiation safety surveys of various types of diagnostic medical X-ray systems in theater. The mission provides assistance to various medical treatment facilities in the U.S. Army Central Command area of operations. No specific concerns related to the equipment have been identified. The mission is to ensure continued safety for both medical personnel and patients.

Emily Reinke and Valerie Adams, Toxicology Portfolio biologists, and Capt. Jennifer Jackiw, Laboratory Sciences Portfolio biochemist, represented the Army as judges in the Junior Science and Humanities National Symposium in Washington, D.C., April 24–26, judging 30 presentations and groups. Adams also was one of four judges for the final competition. The annual competition allows high school students to present original research projects in seven different Science, Technology, Engineering and Mathematics categories. Competitors are chosen from regional competitions earlier in the year. Scholarships are awarded to the winners. Reinke also sat on a panel that discussed the options available in pursuing a STEM career in the Department of Defense.

Dave Davis, G–6 Information Management director, participated as a national judge in the Army Educational Outreach Program eCybermission competition in Leesburg, Va., June 19. As part of the AEOP portfolio, eCybermission is a Web-based Science Technology, Engineering and Mathematics competition that allows students from sixth through ninth grades to apply STEM studies to problems affecting their communities. Davis said many topics in the eCybermission competition directly relate to the mission of the USAPHC, including topics such as water purification, disease prevention, food safety, entomology and hearing protection.

“I would highly recommend USAPHC participation in future events, for the benefit of the students, potential exposure of the Medical Command and the Public Health Command to the students, and for the personal/professional satisfaction of interacting with the students,” Davis said. ▲

Farmers markets offer healthy choices to Soldiers and families



Suzi Gibson, a vendor at the Fort Meade farmers market, set out vegetable, herb and flower plants and provided planting information for customers who wanted to grow their own gardens. (USAPHC photos by Graham Snodgrass, Visual Information Division)

As part of the Department of Defense's Healthy Base Initiative, some military posts have introduced farmers markets to encourage healthy eating. These seasonal markets can offer locally grown fruits and vegetables, meats, and baked goods.

The U.S. Army Public Health Command recognizes the possible health benefits of the fresh fruits and vegetables offered at these markets, but the USAPHC veterinary food inspection specialists also keep a close eye on the safety of the items sold.

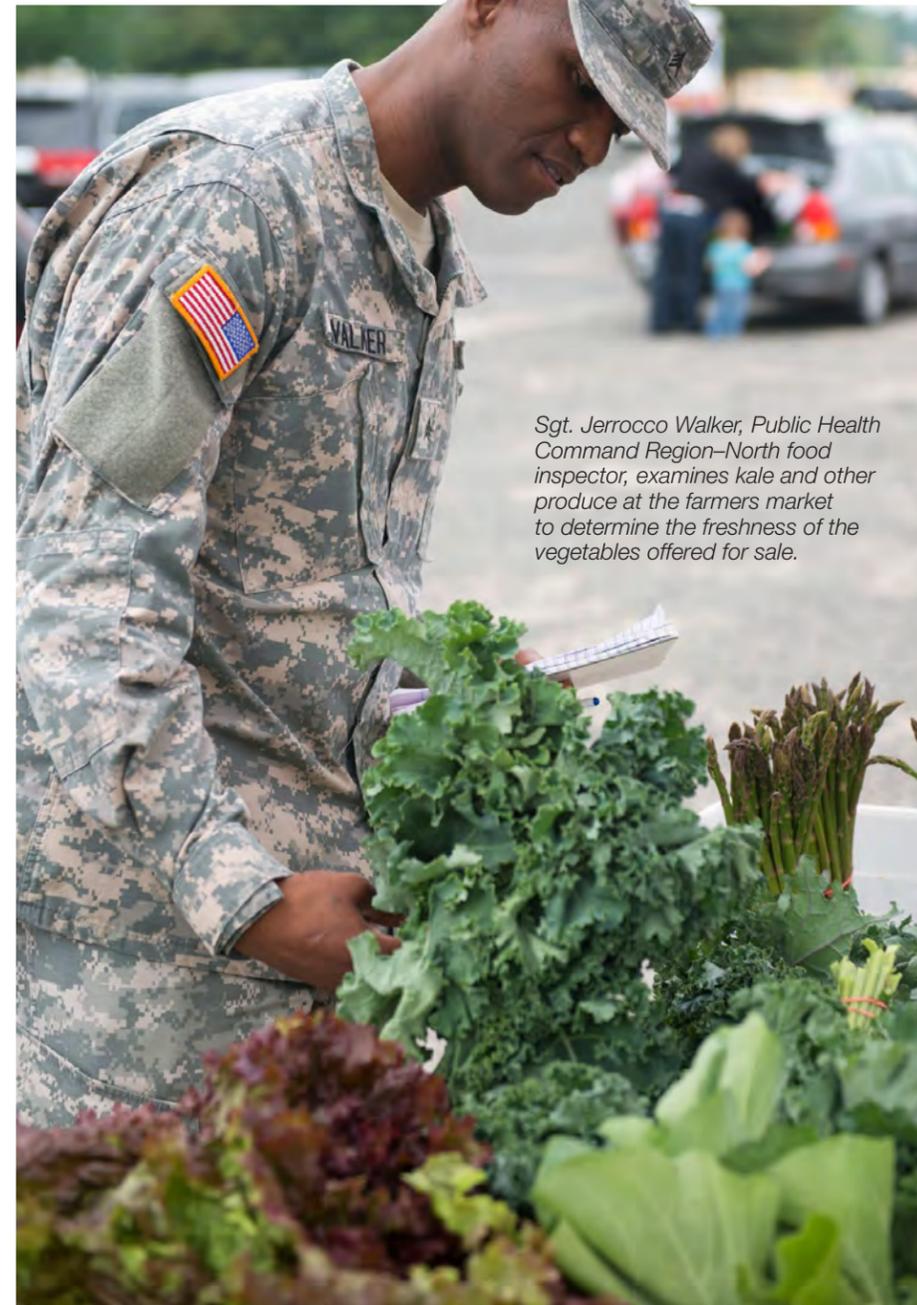
JANE GERVASONI
EDITOR

"Foods from local growers are often picked the same day they are sold, so they are very fresh and are more nutritious," explained Chief Warrant Officer 5 Christopher Finch, USAPHC Food Protection Program deputy program manager. "Freshness is one of the biggest advantages of local farmers markets."

However, since they come straight from the farm, they also need to be washed carefully to remove any contamination.

Finch suggests a common-sense approach when buying food from farmers markets.

"Even though we all know vegetables are healthy, if not handled correctly they can cause a lot of problems," he said.



Sgt. Jerrocco Walker, Public Health Command Region-North food inspector, examines kale and other produce at the farmers market to determine the freshness of the vegetables offered for sale.

To avoid illness the Food and Drug Administration recommends that raw fruits and vegetables be washed with clean, cold water to reduce bacteria that may be present on fresh produce.

To help avoid other health risks, no canned goods other than jarred jams and jellies and no unpasteurized milk or milk products will be available at the installation farmers markets. Only meats from approved-source vendors will be offered for sale.

"The first market of the year was held at Fort Meade, Md., on May 21," said Finch. "With the help of the U.S. Department of Agriculture and our Public Health Command region food inspectors, we evaluated the six farms and vendors participating to ensure they meet minimal federal food-safety standards to protect buyers."

Collaboration among installation planning personnel; Family Morale, Welfare and Recreation; Public Health Command regional veterinary food inspection specialists; installation preventive medicine personnel; and the USAPHC food inspectors was key to planning this event, according to Capt. Nadia Kendall-Diaz, environmental health chief at Kimbrough Ambulatory Care Center, Fort Meade.

"Everyone got together early, kept open minds, and worked with all of the different regulations and post policies to plan an event that was designed to benefit Fort Meade personnel," said Diaz.

"Lessons learned from the first farmers market will benefit these events in the future," said Chief Warrant Officer 3 Richard Belcher, USAPHC food safety inspector.

Fourteen installations in nine states plan to host weekly farmers markets during the growing season, and USAPHC veterinary food inspectors will be at each one to ensure state regulations are followed.

The DOD Veterinary Services Activity is developing a policy for farmers markets on military installations, and veterinary food inspectors from the USAPHC are providing input using information gained by visiting the markets.

"Going to farmers markets gives the buyer a chance to get to know the farmer and ask questions about products or preparation methods," Finch said. "They also provide a learning opportunity for children and their families about healthy foods and where they come from." ▲

Army invention helps prevent mosquito- borne disease

JANE GERVASONI
EDITOR



It took more than 20 years, but a device invented by Army entomologists to control the population of mosquitoes that carry diseases is now available to installations.

As well, the device is commercially available to Soldiers and civilians for home use and to target day-biting mosquitoes that attack during picnics and outings.

"The primary targets of the device, called a lethal ovitrap, are female *Aedes aegypti* and *Aedes albopictus* mosquitoes that can be found throughout the Eastern and Southern U.S., South America and other parts of the world," explained Thomas Burroughs, U.S. Army Public Health Command Entomological Sciences Program manager.

"These mosquitoes are carriers of dengue fever, West Nile virus, yellow fever and chikungunya virus," said Burroughs. "A method of controlling vectors of these diseases has been sought by the military for many years."

The trap works by exploiting the female mosquito's biological need to lay eggs.

"The traps contain a pesticide that kills both larvae and the adult female, thus preventing her from laying more eggs in other locations," according to Sheila Adams, Entomological Sciences Program laboratory technician.

When first designed, the traps were used to monitor the type and number of mosquitoes in an area.

In the 1990s, Brian Zeichner from what was then the U.S. Army Center for Health Promotion and Preventive Medicine and is now the USAPHC and Michael Perich of the Walter Reed Army Institute of Research developed this breeding container. Ultimately, they enhanced its capabilities and made it lethal to the insects and their larvae. The USAPHC and WRAIR hold the patent on the device they developed.

"These dark, water-filled containers mimic the natural breeding site of container-breeding mosquitoes," said Burroughs. "Both the *Aedes aegypti* and *Aedes albopictus* mosquitoes prefer to lay their eggs in small, man-made containers that hold standing water, including rain buckets, flower pots and old tires."

Once the female goes into the trap, she and any hatchlings are history.

The lethal ovitraps have been used in many field studies to show their effectiveness in reducing mosquito populations and thus lowering the risk of disease transmission, according to Burroughs.

"In January the trap received an Environmental Protection Agency registration number," he said. "Pesticide products sold in the U.S. must have this registration."

The Armed Forces Pest Management Board approved the USAPHC's lethal ovitrap for National Stock Number assignment. It is available through the federal supply system, and USAPHC environmental experts are encouraging installations and public health staffs to use it.

"Military installations can integrate this lethal ovitrap into their mosquito control programs. This will give them an effective tool that

also reduces pesticide exposures to applicators, residents and the environment," said Lt. Col. Gayle McCowin, Environmental Health Engineering Portfolio director at the USAPHC.

But the military is not the only user of traps that kill mosquitoes and their eggs or larvae.

The World Health Organization advises the use of this type of trap in its report on controlling dengue fever. "Studies have shown that (mosquito) population densities can be reduced with sufficiently large numbers of frequently-serviced traps. Life expectancy of the vector may also potentially be shortened, thus reducing the number of vectors that become infective," the report states.

The good news is that these lethal ovitraps are now available in local retail stores for civilian use as well as for military preventive medicine and medical personnel. The lethal ovitrap may be ordered through the military supply system using the NSN 6840016284751 or by the item name "insecticide, dichlorvos."

"This is a good news story for everyone," said McCowin. "These traps will have a significant impact in reducing mosquito-borne illnesses around the world. They are an important tool in the inventory of Department of Defense pest control products." ▲



The lethal ovitrap is filled with water, and the velour paper landing strip and a pesticide-treated strip from the white packet are attached to the trap. The female mosquito lands on the velour strip to lay eggs and receives a lethal dose of pesticide. (Photos by Graham Snodgrass, Visual Information Division)

Medical Cost-Avoidance Model demonstrates value of prevention

JANE GERVASONI
EDITOR

The U.S. Army Public Health Command agrees with Ben Franklin that “an ounce of prevention is worth a pound of cure.” This is especially true when it comes to preventing disease, injury and disability to active-duty Soldiers.

As budgets shrink, it is more important than ever to demonstrate the health impacts of new military equipment or modifications to current equipment, but this requires objective data to make informed decisions. The USAPHC Health Hazard Assessment Program has developed the Medical Cost-Avoidance Model—a series of tools that can help demonstrate the cost of failing to prevent adverse health consequences.

The HHA Program addresses the potential effects of materiel systems health hazards on the personnel who operate and maintain the systems. As part of the program’s assessments, the USAPHC is using this new, data-driven tool.

“The Medical Cost-Avoidance Model can estimate avoidable acquisition life cycle medical costs resulting from the elimination or control of health hazards,” explained Cindy Smith, industrial hygienist with the HHA Program. “It relates the medical cost factors that are attributed to health hazards to better justify methods of their elimination or control.”

“Mitigating health hazards early in the acquisition process is usually less costly than waiting until later in the process,” explained Timothy Kluchinsky Jr., HHA Program manager. “Having a return-on-investment tool available to justify and prioritize mitigation strategies allows materiel developers to make more informed decisions on the materiel being designed.”

Health hazards are often inherent in Army materiel and may cause injury or illness at any point in the acquisition life cycle, according to Kluchinsky. If injuries occur, medical treatment costs pose a considerable financial burden to military and veteran healthcare systems, and the resulting lost time degrades productivity and unit readiness.

“Various health hazard types including chemical and biological substances, acoustic and radiation energy, vibration, shock, trauma, and temperature extremes can be evaluated using

this model,” said Kluchinsky, who holds a doctorate in public health. “The Medical Cost-Avoidance Model gives commanders and project management offices a risk-based severity and probability tool designed to estimate the return on investment associated with incorporating mitigation recommendations published in health hazard assessment reports.”

“USAPHC health hazard experts assess new or improved materiel by evaluating types of hazards that exist, injuries or illnesses likely to result from the hazards, level of risk for each hazard, and corrective actions needed to eliminate or control the hazards,” explained Smith. “Our health hazard experts report this information to the materiel program management offices responsible for the development and life cycle management of the materiel system.”

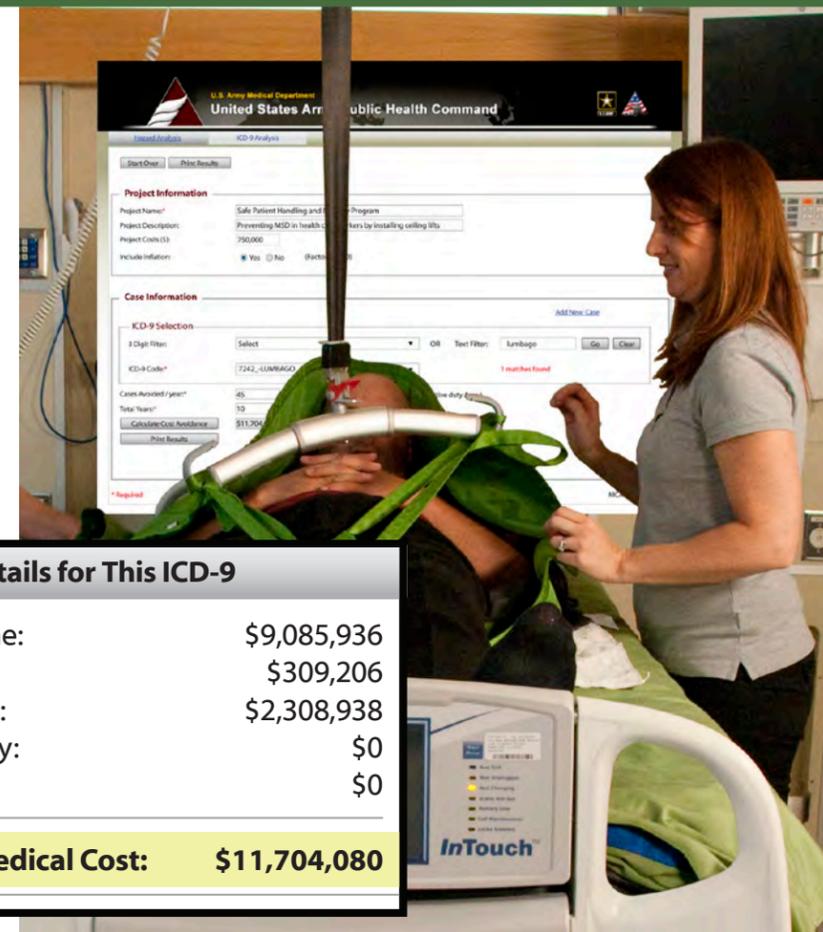
As part of their assessment, the HHA Program uses the MCAM to predict future health hazard costs based on data from the Military Health System and the Veterans Benefits Administration.

“The primary MCAM function is its ability to estimate total system-related medical and lost-time costs, using the cost factors of lost time, disability and fatality. The MCAM provides a return-on-investment model that is a way of comparing profit or loss to the amount invested,” said Smith.

Materiel program management offices can also use the MCAM output to establish health hazard abatement priorities before materiel fielding, and to assess the potential impact on military readiness.

“A single engineering change may eliminate hazard costs across the entire fleet or equipment type. The benefit would be a reduction in lost time and medical-related costs,” according to Smith. “Exposure to the causes of injury and disease can trigger a series of possible events: clinic visits, hospitalization, lost time, disability and fatality.”

Working with the Army Ergonomics Program on the safe patient-handling initiative, Smith used the MCAM and information on the frequency of musculoskeletal disorders



Cost Details for This ICD-9	
Lost Time:	\$9,085,936
Clinic:	\$309,206
Hospital:	\$2,308,938
Disability:	\$0
Fatality:	\$0
Total Medical Cost:	\$11,704,080

Healthcare providers are at high risk for musculoskeletal disorders because they are required to manually move patients. The MCAM, using International Classification of Disease 9th Revision coding for the most probable MSD related to patient handling, can provide a return on investment for installing patient-handling equipment as a part of the Safe Patient-Handling and Mobility Programs developed by the USAPHC Ergonomics Program. (USAPHC photo by Christina Graber, Visual Information Division)

suffered by active-duty healthcare providers when manually moving patients to compile the total medical cost of these injuries and compared them to the cost of installing various types of equipment to assist in moving patients.

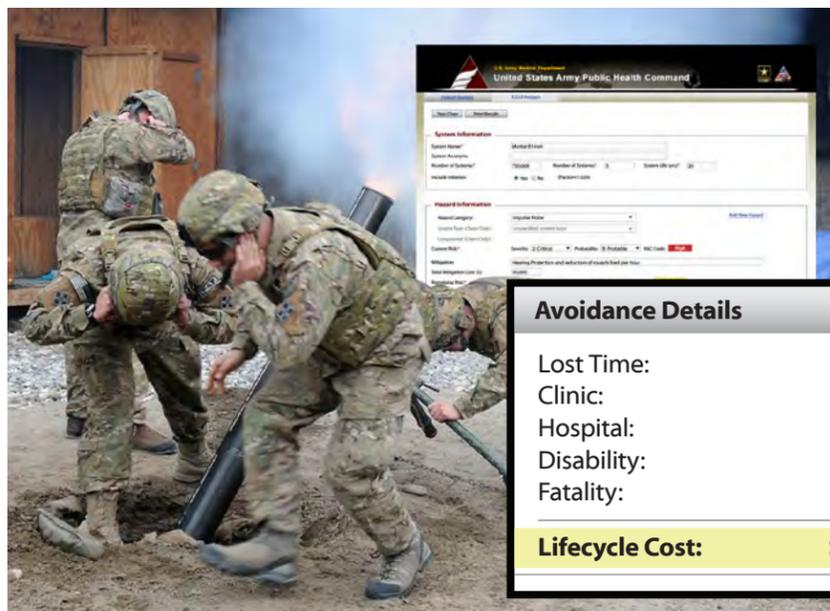
“The MCAM output demonstrated that there was a significantly lower cost to install safe patient-handling equipment than to pay the medical, disability and lost-time costs associated with not installing the equipment,” said Smith. “Using the analysis provided by the MCAM, it was determined that it would be 18 times less expensive to install new equipment than to pay the estimated medical and lost-time costs associated with not installing the equipment.”

This ability to project return-on-investment can be a vital tool to acquisition managers according to Kluchinsky.

“The MCAM tool is available on the USAPHC public website,” said Kluchinsky. “It provides hazard analysis and predicts medical and lost-time costs based on actual Army medical records.”

“The MCAM provides the means to optimize and articulate the return on investment (avoidable medical, lost-time, disability and fatality costs) important to occupational health, preventive medicine and safety-related investment decision-making,” he said.

The Medical Cost-Avoidance Model is available at <https://usaphcapps.amedd.army.mil/mcam> ▲



Avoidance Details	
Lost Time:	\$3,198,991
Clinic:	\$374,972
Hospital:	\$6,570
Disability:	\$862,573
Fatality:	\$0
Lifecycle Cost:	\$4,443,106

The Medical Cost-Avoidance Model demonstrated the cost avoidance in medical treatment, lost time and disability by implementing recommendations to reduce a Soldier’s exposure to health hazards such as impulse noise. The MCAM estimated a total medical cost avoidance of \$4,443,106 by lowering the risk of impulse noise hazard to a mortar team over the lifecycle of the 81mm mortar (20 years) from a high to a medium risk. (U.S. Army photo by Staff Sgt. Gary A. Witte, 300th Mobile Public Affairs Detachment)

Nonionizing radiation can affect health

JANE GERVASONI
EDITOR

THE U.S. ARMY PUBLIC HEALTH COMMAND HAS A PROGRAM, unique within the Army, that protects people from the health hazards of nonionizing radiation. Visible light, lasers, and infrared, microwave, and radio-frequency radiation are all examples of nonionizing radiation used every day in both the military and civilian sectors.

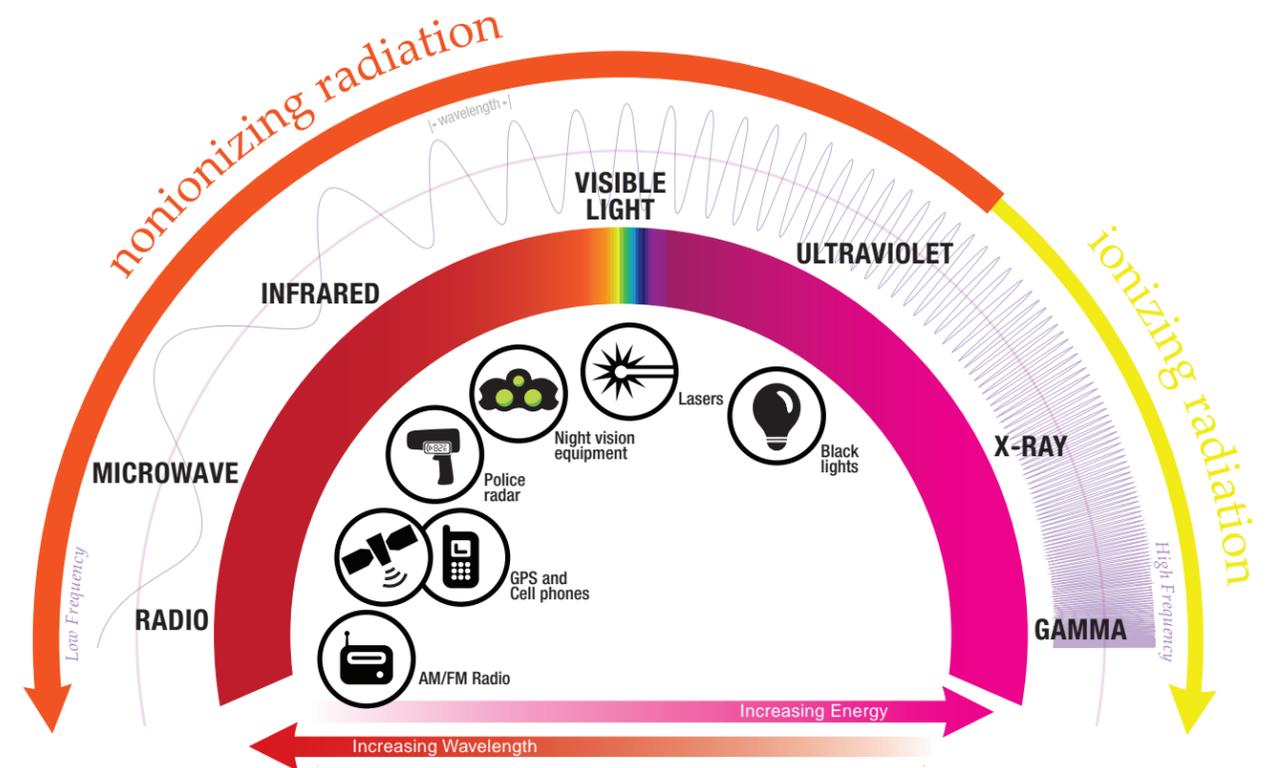
"The Nonionizing Radiation Program collects and analyzes data about nonionizing systems and provides recommendations for their safe use," according to John DeFrank, Nonionizing Radiation Program manager at USAPHC. "The program's scientists, physicists and engineers have decades of knowledge and experience in evaluating nonionizing systems used by the Army."

DeFrank explained that program experts work with electromagnetic energy from radio-frequency energy and microwaves to lasers. These different types of energy affect the human body in different ways, and the USAPHC experts look at health effects of the various forms of energy.

Soldiers and Army civilians are exposed to nonionizing radiation systems through use of cell phones, radar equipment, laser pointers, facial-recognition laser scanners and other equipment used every day during the performance of their duties or in their personal lives.

"Although nonionizing radiation is much less dangerous than ionizing radiation, which is the kind of radiation found in X-rays, for example, overexposure to nonionizing radiation may still cause some health issues," according to DeFrank. "Radio-frequency energy is nonionizing radiation that can affect both the human body and other electronic systems."

"The primary effect of RF energy overexposure for people is thermal, a rise in temperature, but this effect is only temporary," said



Francis Colville, NRP electronics engineer. "RF energy does not accumulate within the body over time."

Colville helps warn and inform Soldiers, Department of Defense personnel and DOD contractors about the hazards of nonionizing radiation in the areas of microwave and ultrasound sources, including medical equipment, and RF energy.

"Many types of military equipment, such as radars and radios, expose Soldiers to sources of RF energy every day," Colville explained. "Program personnel understand the health hazards and inform those who build and use the equipment about health effects and protection methods."

Teaching Soldiers and others about protection from the health hazards of nonionizing radiation is one of the missions of the program.

"Our RF energy and laser courses can be tailored to meet the specific needs of the users," said Colville. "Because we help to write the operating procedures for the systems, we have a thorough understanding of them. The technical data we collect is used to analyze nonionizing radiation systems and provide the required safeguards."

Lasers, also targeted in the course, make up the other half of the Nonionizing Radiation Program.

"The Department of Defense, in particular, has seized upon the rapidly expanding capabilities of laser radiation, funding research into and development of laser technology covering nearly every type of lasers known," according to Kieran Lerch, NRP laser physicist.

"Program experts identify the type and power of lasers and provide evaluation services to any Army customer and occasionally other U.S. government agencies as well," he said.

Soldiers who use or are exposed to laser equipment may be at risk for health hazards including thermal damage to the eyes and skin. The NRP continuously studies changes in laser technology that may affect Soldiers.

According to DeFrank, in the last year, the NRP has evaluated new variations on many types of lasers for use in both scientific research and military programs including systems for navigation, detection and training.

"Military equipment has inherent risks," said DeFrank, "but with a dynamic nonionizing radiation safety program that includes measurement surveys, risk communication, training and protective measures, Soldiers and those in surrounding communities can be assured that exposure to nonionizing radiation hazards will be reduced or eliminated."

For further information regarding nonionizing radiation, visit the U.S. Army Public Health Command's Nonionizing Radiation Program website at <http://phc.amedd.army.mil/organization/institute/dohs/Pages/Nonionizing.aspx>. ▲

Public Health Command employee enjoys unique opportunities in leadership development program

CHANEL S. WEAVER
PUBLIC AFFAIRS OFFICE

After completing a year of a physically and mentally demanding Department of Defense leadership program, Jessica Brockmeyer, executive officer for the U.S. Army Public Health Command's Laboratory Sciences Portfolio, has emerged as a stronger leader.

Brockmeyer is one of only 63 civilians from across the DOD to complete the Executive Leadership Development Program this year. The program provides participants with a joint and interagency training and leader development experience.

The 10-month program was filled with activity. Participants spent 7–12 days a month training with various governmental agencies, testing their mettle by firing weapons, jumping from towers, and completing obstacle courses with U.S. military personnel. They travelled to various bases, some overseas. They also wrote papers, participated in many group collaboration projects and read several books.

“One of the hardest parts of the program was juggling your regular job with the deployments,” said Brockmeyer. “We all have responsibilities at our home stations, so to be successful, we quickly learned to find a balance between the program requirements and our daily duties.”

In addition to the academic requirements, ELDP participants met stringent physical requirements.

Despite the long days and strenuous activity, Brockmeyer said she is indeed grateful to be part of this year's graduating class.

She values her time spent in the field training with many DOD military units.

“This training was compelling because it caused you to think about why you are serving,” said Brockmeyer. “Doing some of the same things that the troops do was an eye-opening experience for me and served as a reminder that we DOD professionals are here to support our troops.”

To further mark her achievement, Brockmeyer was also selected to serve as a commencement speaker during the ELDP graduation June 11. Although Brockmeyer was thrilled to represent the USAPHC during the commencement program, she wanted to be sure that she did a good job.

“Being selected as a commencement speaker was an honor and privilege, but also a little intimidating” said Brockmeyer. “I wanted to be sure that I not only represented the Public Health Command well, but that I also represented my fellow classmates well by successfully communicating what we learned.”

(TOP) Jessica Brockmeyer practices flying a virtual airplane while under reduced oxygen conditions (hypoxia) as part of the physically and mentally demanding Executive Leadership Development Program. (Photos courtesy of Jessica Brockmeyer)

(BOTTOM) Jessica Brockmeyer stands aboard a U.S. Coast Guard vessel during a training portion of the ELDP. Participants spent 7–12 days a month, training with various government agencies.

Fellow employees at the USAPHC expressed no surprise that Brockmeyer performed so well in the program. They said she demonstrates great dedication and commitment.

“I've been fortunate to work with Jessie now for many years, and she has always demonstrated an eagerness to learn and a willingness to take on new, challenging assignments,” said Gerri Miles, chief of the Laboratory Operations Division in the Laboratory Sciences Portfolio. “Jess is passionate and an optimist about the future. I see Jessie as courageous and inspiring; she is willing to do what has not been done.”

Many people across the USAPHC say that encouraging employees to grow themselves professionally is a key objective in shaping the USAPHC workforce.

“The Public Health Command places great emphasis on education, training and development of employees,” said Karen Lunas, USAPHC training officer.

“Civilian leadership development and career planning is the process of systematically matching an individual's aspirations with opportunities for achieving them,” said Lunas. “The ELDP is just one of the many avenues available to achieve this goal.”

The ELDP is open to full-time Army civilians in the GS-12 through GS-14 or equivalent pay grades, with a minimum of three years of service as a permanent Army civilian. Participants must also possess a baccalaureate degree from an accredited college of university, pass a physical exam and meet certain security requirements. ▲



EMPLOYEES HONORED

Paula Steven and Karla Simon, U.S. Army Public Health Command industrial hygienists, received the Outstanding Team Project Award from the American Industrial Hygiene Association. The award was presented June 3 during the annual 2014 American Industrial Hygiene Conference and Exposition in San Antonio, Texas. Steven and Simon are Midwest regional director and assis-

tant director, respectively, of a special volunteer mentoring team that is part of the AIHA Students and Early Career Professionals Committee. They received the award for managing 38 mentor/mentee pairs in their regional area and helping to build community within AIHA while supporting the future of the industrial hygiene profession. ▲

