Warrant officer makes trip to ‘the ice’

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Air surveillance at Bagram a 1st for Afghanistan

LYN KUKRAL
USAPHC PUBLIC AFFAIRS OFFICER

Service member concern about exposures to ambient air in the Central Command area of responsibility has grown with the passing of time. To date, the Department of Defense has found little scientific evidence of long-term health effects due to these exposures, though short-term effects such as sore throat, cough, eye irritation, runny nose and other cold-like symptoms are possible.

Service member concern has caught the ear of Congress, which last year required the Veterans Administration to establish an airborne hazards registry of service member-reported health issues. Experts from the U.S. Army Public Health Command’s Occupational and Environmental Medicine and Health Risk Management portfolios continue to assist the VA in development of the registry. As well, they continue to be involved in air surveillance and analysis.

Since the first Gulf War, the USAPHC and its DOD partners have sought to characterize the ambient air in CENTCOM. Primarily a desert environment, the air there differs from that in most of the United States, routinely exceeding Environmental Protection Agency standards for particulate matter. This particulate matter, or PM, comes primarily from dust in the natural environment, although chemicals and compounds from oil well fires, aviation, vehicle fuel, industry, indigenous solid waste disposal and other human activities contribute.

Deployed preventive medicine detachments routinely collect air samples, which are analyzed in laboratories—the USAPHC’s and others—with results stored in the Defense Occupational and Environmental Health Readiness System—Industrial Hygiene.
Environmental Health Business Area, or DOEHRS-BH (EH). Additionally, special sampling missions occur—the USAPHC has participated in the multiple site, CENTCOM-wide PM sampling conducted in 2006–7; the 2007–10 sampling at Balad, Iraq, specifically focused on air quality and burn pit emissions; and the September 2013 air surveillance mission to Bagram Air Field, Afghanistan. The latter is the most detailed air sampling done in Afghanistan to date by the U.S.

“Our team went there at the request of Task Force Medical Afghanistan,” said John Kolivosky, HRM Portfolio environmental engineer and team leader. “The task force concern was overall air quality given the natural dust, emissions from local communities and drifting down the valley from Kabul, Bagram and move, but don’t provide this level of capability.”

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While preventive medicine detachments had conducted air sampling for particulate matter, Kolivosky’s team brought in a literal ton of specialized equipment to identify organic and inorganic compounds as well. “Previously, particulate matter had been sampled at Bagram by preventive medicine detachments, but not the other sampling that we did on this mission,” Kolivosky explained. “We had multiple types of samplers, including high-volume samplers, passive canisters, battery-powered samplers, and real-time, continuously operating surveillance data loggers. PM detachments normally are using light-weight, portable samplers that are easy to set up and move, but don’t provide this level of capability.”

The team was on the ground for three weeks testing multiple areas on the air field. “We selected locations on the basis of where the most people were concentrated, where the most people would be moving through, and where the aviation brigade operated,” Kolivosky said. “Our objectives were to get different air quality based on these locations and to address the potential exposure of the largest number of people.”

While deployed, the team encountered scrutiny from the task force’s public health chief, who turned out to be a friendly face from home. “They delivered the most comprehensive sampling that has been done by U.S. forces to date,” affirmed Col. Steven Cersovsky, now back from deployment and serving as the USAPHC’s director of the Epidemiology and Disease Surveillance Portfolio. “They’re providing a detailed snapshot in time—another series of data points that will help build the repository of exposures we hope to link with future health outcomes. This is the ultimate goal—the Holy Grail of public health—a goal that has been very difficult to achieve in the past.”

The team sent back about 200 samples for analysis in the Army Institute of Public Health’s Laboratory Sciences Portfolio. “This number of samples is enough to give a good initial screening at a level of detail we previously haven’t had for Afghanistan,” Kolivosky said.

Once analyzed, a report on findings will be forwarded to Task Force Medical Afghanistan. The report will assess both operational and long-term health risks using Military Exposure Guidelines and EPA models, and will recommend whether additional air surveillance is needed, he said.

In addition to air surveillance, team members also extended the reach of the mission by providing their equipment and the training to use it to a preventive medicine detachment at Kandahar, the next Afghan location selected to yield a detailed snapshot of air quality.
One of the most common reasons many individuals do not exercise is because they don’t have time in their schedules. Between working long hours, taking care of family needs, and tending to community obligations and other personal needs, there is no additional time in the day to implement a workout routine.

But a group of personnel at the U.S. Army Public Health Command have discovered a way to incorporate fitness into their day by approaching work differently. While many individuals scour buildings looking for a meeting space, these individuals conduct meetings outdoors—and they walk while they talk. All are members of the HPW employees who include these essentials in their daily routine are able to optimize their health.

Many USAPHC employees say they are grateful to work for an organization with such flexibility.

“I enjoy incorporating walking into my day,” said Wana Jin, an Army public health nurse, said being outdoors causes USAPHC employees to stay focused on the mission.

“The ‘outdoor office’ lends itself to free thinking with few interruptions or boundaries, all the while exercising the body and mind,” according to Bruley.

In addition to the opportunities for contemplation and collaboration, these outdoor walking meetings allow USAPHC employees to build and sustain their own good health.

“After 45 minutes to one hour of walking and talking, we find that we have walked over two miles,” said Maj. Lakisha Flagg, an Army public health nurse.

“Walking and talking has become a collegial venue for us [public health nurses] to incorporate physical activity while comfortably and creatively working through both routine and complex mission requirements,” said Bruley.

Portfolio personnel say walking meetings afford them an opportunity to squeeze in fitness when they can.

“We continually look for ways to help our Soldiers create environments where healthy change can take place,” said Laura Vasquez, HPW Portfolio program evaluator. “By participating in these walking meetings, we have an opportunity to practice what we preach.”

The outdoor meetings can also be conducted solo.

Steven Bullock, program manager for the Public Health Assessment Program, holds daily running meetings with himself.

“I typically run each day with my voice recorder,” said Bullock. “While I am running, I record myself as I reflect on the day’s events and dictate the things I have remaining to do that day.”

He said the solo outdoor running allows him to prioritize his actions and help him to be more efficient at accomplishing tasks.

The former Army officer enjoys these meetings with his recorder because they provide a dual benefit in keeping him fit and healthy.

“I run in all sorts of weather—rain or shine—sun or snow,” said Bullock. “I really think it is a good use of my lunch hour to increase physical activity and avoid sitting for long periods of time.”

Regular physical activity—along with adequate sleep and healthy nutrition are the three pillars of Army Medicine’s Performance Triad. Personnel who include these essentials in their daily routine are able to optimize their health.

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“I enjoy incorporating walking into my day,” said Wana Jin, a HPW Portfolio program evaluator. “I haven’t experienced this emphasis on health and wellness in other places where I’ve worked.”

Lauren Mitvalsky manages the HPW Portfolio at the USAPHC, and encourages her employees to be active during the day. Many of her staff members wear pedometers to see if they can meet Surgeon General of the Army Lt. Gen. Patricia D. Horoho’s recommendation to take 10,000 steps daily.

“These outdoor meetings are wonderful, because they allow our employees to get away from the distractions of the office, focus solely on the issue and topic at hand, and build and sustain good health habits in the workplace,” said Mitvalsky.

Lauren Shirey, public health accreditation lead and program evaluator in the HPW Portfolio, said she enjoys incorporating walking into her day.

“It’s great to work for an organization where we can accomplish the mission and support our health and wellness goals at the same time,” said Shirey. “Anyone is capable of leading a healthy lifestyle if they think outside of the box.”
As Army Medicine brings the resiliency-building Performance Triad to Soldiers and retirees, their families and Army civilians, one thing is certain. To be healthy, safe and successful, the Triad’s components must be based on science.

No less a person than the Triad’s creator, Army Surgeon General Lt. Gen. Patricia D. Horoho, agrees.

Horoho sanctioned a special October issue of AMEDD Journal, the Medical Command’s leading professional publication, focused on the Performance Triad. It presents the work of Army and Department of Defense experts at the forefront of scientific research related to the Triad’s components—sleep, activity and nutrition.

“The scientific articles in this issue of the AMEDD Journal will help us build an evidence-based foundation for developing the tools that will make it easier for Army beneficiaries to choose good health,” Horoho said in her introduction to the publication.

Bradley C. Nindl, U.S. Army Public Health Command’s science advisor, managed the issue development, reaching out to authors, reviewing content and making the decisions about article acceptance. Nindl also co-authored an article on optimizing physical readiness, supporting the “activity” component of the Triad.

“The Performance Triad issue supports TSG’s goal of transforming Army Medicine to a system for health,” he explained. “It reinforces and scientifically validates her vision for the Triad.”

Nindl was instrumental in engaging medical, academic and scientific experts in the September 2012 surgeon general-sponsored Performance Triad kickoff at Aberdeen Proving Ground, Md. The attendees, including some of the nation’s leading experts in sports medicine, exercise physiology, nutrition, clinical medicine and medical research, brainstormed recommendations for ensuring that the Triad’s health education and behavior-change efforts are scientifically valid. Their recommendations continue to bear fruit within the DOD science and research community.

“The scientific underpinnings of the Performance Triad are DOD research, although we continue to rely on external experts to guide our decisions and ensure they are based in sound science,” Nindl said. Other issue authors also are committed to putting the best science behind the Triad.

“Evidence-based educational and health promotion programs are essential to optimize the safety, efficiency, and effectiveness of strategies that Soldiers use to enhance their performance,” said Dianna L. Purvis, director of Strategic Operations & Special Projects at the Consortium for Health and Military Performance, Uniformed Services University of the Health Sciences, in Bethesda, Md. “But most importantly, our warfighters are the military’s most valuable asset. We must seek to help them protect their health and well-being while optimizing their performance,” added Purvis, who co-authored articles on nutrition and sleep.

For an initiative like the Performance Triad to be successful, it must be based on sound, scientific evidence,” Patricia A. Deuster, CHAMP director at USUHS, affirmed. “Health initiatives based on mass media claims or exaggerated or unfounded claims would be at best limited in effecting positive changes.”

Both DOD and external experts ensured the Triad issue’s articles met high scientific standards.

“Each article underwent rigorous peer review by at least two and sometimes three subject-matter experts from DOD, government and academia,” Nindl said.

The Triad issue’s content targets DOD’s clinical and scientific experts and others whose interests would include the science behind the Triad’s efforts to change mindset and behavior. These are the individuals who will help carry the Performance Triad’s guidance to Army leaders.

“For leaders, experience will be the best teacher of the Performance Triad’s value. Leaders need to experience the benefits themselves to understand and be able to promote the beneficial outcomes in terms of physical and mental performance,” said Deuster, who co-authored articles on fitness and physical readiness.

“One thing are clear in themselves of the value, they will endorse and adhere to the messages being conveyed by the Performance Triad. When leaders buy in to the benefits, they will be the best role models and actively demonstrate the importance of Performance Triad messages,” she added.

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The U.S. Army Public Health Command is assessing outbreaks of the mosquito-borne Chikungunya virus in two locations. Public Health Command Region-Pacific Epidemiology and Disease Surveillance Division is monitoring a new outbreak on the island of Yap in Micronesia. PHR-C Pacific scientists are monitoring the movement of the virus and working with U.S. Naval Hospital–Guam on a potential mosquito identification and pathogen detection project. PHR-C Pacific has the capacity to receive specimens for analysis as well as the capability to conduct mosquito surveillance and pathogen detection on surrounding islands. Elsewhere, PHCR-South and the Army Institute of Public Health are assessing a first-ever, locally acquired outbreak of Chikungunya virus in the Americas on the island of Saint Martin in the Caribbean. The virus is not expected to be of interest to military personnel. 

Mark Johnson, Toxicology Portfolio director, conducted a seminar at Montana State University in Bozeman on Ecotoxicology in the 21st Century: Advances and Considerations in Estimating Risks to Wildlife Nov. 15. While there, he met with staff regarding new work in the areas of biochemistry and toxicology by the faculty and students. Examples include work on biofilms and virulence of pathogenic bacteria, microbe use in bioremediation, toxicology of tetrachloroethylene, and mixture effects of metals in the groundwater of Native American populations. Some of the ecological studies at the university are expected to be of interest to military scientists, and possible collaborations in these areas were discussed.

Michael Eck and Pat Rippey, Waste Management Program, have coordinated with Kimbrough Ambulatory Care Center at Fort Mead, Md., to look at “blue wrap,” a specialized plastic product used as a durable, sterile protective cover for sterilized instruments in operating rooms. Blue wrap has replaced cloth wrap for surgical instruments, but the material poses some disposal challenges due to its volume and transportation costs. It is a target for hospital waste reduction efforts. Eck and Rippey found an organization interested in repurposing the bulky waste and transforming it into heavy-duty, reusable tote bags. Reuse and/or repurposing of this material are options that have the potential to save money and avoid fees to medical treatment facilities for transportation and disposal.

Donna Doganiero, Occupational Health Sciences Portfolio director, and Stephan Graham, Industrial Hygiene Field Services Program, are providing expertise and input to the Department of Defense Industrial Hygiene Working Group. This working group is analyzing the impact to DoD of a proposed Occupational Safety and Health Administration instruction aimed at identifying worker exposure to isocyanates. These chemicals, widely used in the manufacture of foams, fibers and coatings such as paints and varnishes, may cause irritation to skin, eyes and mucous membranes as well as asthma and other lung problems. They also are identified by OSHA as potential carcinogens. OSHA’s instruction would make positive wipe sampling results a “confirmation” rather than the current “indicator” of exposure. This change could falsely identify DoD and Army workers as having potential hazardous health impacts from their jobs. The working group will gather additional information from an OSHA subject-matter expert to help determine a future path forward for DoD. The requirement to assess the proposed OSHA instruction came from the Office of the Deputy Under Secretary of Defense (Installations and Environment).

The United States Army Medical Department Journal for October through December 2013 contains articles supporting the surgeon general’s System for Health and Performance Triad initiatives. Bradley Nindl, USAPHC General's System for Health and Performance Triad scientific advisor; Tyson Grier, Michelle Canham-Chervak and Bruce Jones, Injury Prevention Program; and Theresa Jackson, Public Health Assessment Program, all contributed to this edition. (See related article on page 8-9.) Link to AMEDD Journal—http://www.cs.amedd.army.mil/FileDownloadpublic.aspx?docid=565f6bf8-826e-4922-8182-0e9373b501a

Maj. Jay Clasing and John Pentikis, Ergonomics Program, submitted a chapter on ergonomics for inclusion in the next edition of the Textbooks of Military Medicine series published by the Office of the Surgeon General’s Borden Institute. The chapter will provide updates and help Army personnel better understand ergonomic issues and the need for providing proper mitigation strategies.

Since May, the USAPHC has been providing multidisciplinary expertise to the U.S. Army Installation Management Command in a proactive effort to sample the water at more than 500 child development centers, elementary schools and youth centers at Army installations worldwide. Although Army installations already comply with all applicable federal, state and local regulations for ensuring the safety of the overall water supply, this targeted sampling was conducted to determine lead levels in drinking water specifically from drinking fountains and sinks used for drinking, cooking, beverage and infant formula preparation. The sampling was conducted to identify and mitigate any potential health risks to infants and children through age 6—the population most sensitive to negative health effects from lead ingestion. The USAPHC laboratories analyzed more than 8,300 samples with approximately 4 percent that had levels of lead above the Environmental Protection Agency-recommended level for taking action. The Drinking Water and Sanitation, Health Risk Communication, and Environmental Medicine Programs participated in this effort. All three programs helped develop the IMCOM operations order and communication plan, tailored sampling protocols and provided input for multiple communication products. As sampling results became available, the Drinking Water and Sanitation Program provided sample results interpretation and recommendations to reduce lead levels in drinking water, and the Health Risk Communication and Environmental Medicine Programs provided installation-specific public notification guidance and medical consultative support, to include public forum preparation.

In 2003, then-Surgeon General Lt. Gen. James B. Peake directed the initiation of a series of continuing education presentations for providers and medical staff supporting Army readiness missions. The series addressed screening and assessing of employees who work in chemical, biological and nuclear programs. A cadre of experts provided instruction in many disciplines, including different clinical medical specialties, laboratory science and toxicology, industrial hygiene, safety, emergency preparedness and behavioral health. The value to the providers and the Army was enhanced when the series received accreditation as an American Medical Association Physicians’ Recognition Award Category 1.
Continuing Medical Education credit. Today, attendance at the monthly hour-long sessions averages approximately 50 persons who work in a range of clinical and ancillary services positions. Attendees then and now are from more than 20 different clinics in the continental U.S. and at Army locations in Europe. In addition to the education content, the opportunity to interact and share observations, questions and lessons learned is now a prominent aspect of the series. Now using Defense Connect Online instead of video teleconferences, the series has been retitled the Surety Medicine Teleconference and is celebrating its 13th year of operation.

Sgt. 1st Class Jessie W. Leonard, assigned to the PHCR-West, District San Diego, was selected as a Col. Cliff L. Walker Leadership Award recipient. The award recognizes non-commissioned officer junior and senior veterinary food inspection specialists and/or animal care specialists who demonstrate outstanding leadership through care and concern for Soldier, family and mission using the personalized leadership style that characterized Walker's military career in the Veterinary Corps. Among other efforts, Leonard supported and managed a branch volunteer program that resulted in more than 500 combined volunteer hours in a north San Diego community.

Coleen Baird, physician with the Occupational and Environmental Medicine Portfolio, has been granted a fixed-term appointment to the University of North Carolina-Chapel Hill School of Public Health faculty. As part of her duties, she will work with a graduate student on the potential association between amyotrophic lateral sclerosis (ALS or Lou Gehrig's disease) and military service and deployments. This research, which will last approximately two years, will use the Veteran's Administration's ALS Registry.

Staff Sgt. Rafique Khan, non-commissioned officer-in-charge at the Fort Belvoir, Va., branch of Public Health Command District-Fort Belvoir, represented U.S. Forces Command in competing for the title of 2013 USO Soldier of the Year. He was named the top nominee in all of FORSCOM for heroic actions during a firefight at Forward Operating Base Salerno in Afghanistan. He represented the more than 750,000 FORSCOM Soldiers competing for the national title with other Soldiers from across the Army. For his actions in Afghanistan, he was awarded the Bronze Star Medal for valor and the Combat Action Badge, as well as the Purple Heart for injuries.

The Waste Management Program helps medical treatment facilities, veterinary facilities and dental activities with questions about all sorts of waste material.

“We go all over the world helping Army medical personnel and environmental science and engineering officers keep their waste management programs within strict U.S. and local guidelines,” explained Richard Price, an environmental engineer in the WMP.

Price recently returned from a trip to Korea, where he worked with personnel in the medical, dental and veterinary facilities to ensure they followed proper procedures in managing their special wastes.

“Weing with medical logistics personnel, we helped U.S. Army Medical Command facilities as they tracked, calibrated and certified medical equipment, and gave guidance on hazardous waste from sharps containers to red bag waste—all to ensure that material was handled correctly,” he said.

“Our medical treatment facility assistance visits, like the one in Korea, are done as part of the U.S. Army Medical Command visits or at the request of regional medical commands,” said Linda Baetz, WMP manager. “Our regional environmental health teams also provide assistance visits for medical treatment facility environmental science and engineering officers.”

These visits are all performed in an effort to ensure that the medical treatment facilities are in compliance with regulations. MTFs have some unusual challenges when it comes to waste materials.

Many clinical analyses performed at these facilities use liquid chemicals and generate mixed wastes. These need to be evaluated to ensure they meet hazardous and waste water regulations before disposal. WMP subject-matter experts have an up-to-date knowledge of applicable regulations and know where to find answers to these unusual disposal questions.

Other waste materials are generated by laboratories at MTFs and other locations, and these liquid wastes also must be evaluated to meet hazardous waste and water waste regulations, according to Baetz.

Dental clinics also have special challenges when dealing with extracted teeth that may have metals that can be toxic to human health and the environment.

“We often provide special assistance visits to dental clinics to include onsite assessments, training and sample collection because of their unusual wastes,” said Baetz.

But the Waste Management Program is also involved in preventing and minimizing waste that may affect health and the environment.

**Sustainable products often have recycled or bio-based content, are energy efficient, or have a lesser effect on human health and the environment as compared with other products.**

—Beth Martin

Environmental Scientist
Picture the stereotypical, white-coated pharmacist with horn-rimmed glasses and a slightly graying beard filling prescriptions for the family. His job is to ensure that each patient receives safe medications. At military pharmacies, he may fill several hundred prescriptions each day. While the public understands the need for these medications or pharmaceuticals, there is developing concern about their disposal. The number of pharmaceuticals in any given inventory has approached the thousands. Ensuring that Army medicine personnel know how to avoid such concerns is the business of the U.S. Army Public Health Command’s Waste Management Program. It’s part of the WMP’s job to train and develop educational materials that address the issue of pharmaceutical disposal.

“Cradle-to-grave’ management of hazardous waste applies not just to industrial manufacturing, but to healthcare facilities,” according to Col. Catherine Benham, keynote speaker representing the Army Office of the Surgeon General pharmacy consultant at the recent Pharmaceutical Waste Management Course hosted by the WMP.

Historically, a medical treatment facility’s logistics section has been responsible for pharmaceutical waste management. According to Benham, “Army pharmacists are the medication use experts; they need training programs like the Pharmaceutical Waste Management Workshop to become medication waste experts.”

The Department of Defense has a program to return some pharmaceuticals to manufacturers, often receiving credit towards the purchase of additional pharmaceuticals. However, specific pharmaceuticals may be hazardous waste and must be disposed of lawfully. “The Environmental Protection Agency has collected fines for improper hazardous pharmaceutical waste management in the private sector and written Notices of Violation to both Army and Air Force pharmacies,” said Debbie Hursh, certified environmental trainer in the WMP.

The Environmental Protection Agency, the Drug Enforcement Administration, and the Department of Transportation are all proposing new rules to address this problem as research continues into environmental concerns surrounding the disposal of pharmaceuticals, she said. As the subject-matter experts in the field, the WMP has advised deployed units with complex disposal issues, conducted hundreds of inspections for waste management compliance, and held dozens of waste management courses for laboratory, facility logistics staff, and environmental science and engineering officers, according to Linda Baetz, WMP manager.

These courses provide knowledge about how to properly dispose of hazardous waste. Previously, they were not attended by pharmacy staff, so a specific course directed at the pharmacy community was offered to break down perceived barriers. The program staff facilitated a Pharmaceutical Waste Management Workshop targeting DoD pharmacists and pharmacy technicians. The object was to make the pharmaceutical waste process as simple, understandable, and consistent as possible so the end user will improve program compliance and enhance buy-in from all MTF staff.

The program developed tools like the pharmaceutical waste wheel and the Military Item Disposal Instruction database to help simplify the process and enhance the training. "The Pharmaceutical Waste Management Workshop was a very timely training opportunity for the pharmacy community and provided immediate value in light of pending EPA guidelines. Most impressive was the willingness of the workshop planners to incorporate pharmacy waste-related operational challenges into the agenda," explained Col. John Spain, OTSG pharmacy consultant. "We were able to share expertise and gained valuable collaborative relationships. I see tremendous value in offering this training to others within Army pharmacy and sharing this opportunity with our sister services."

"The WMP assists MTF personnel with navigating the complex and often conflicting web of waste regulations, but the key to success is the training program which encourages users to collaborate and share best implementation practices," said Benham. ▲
EMPLOYEES OF THE U.S. ARMY PUBLIC HEALTH COMMAND are found in 14 time zones in 85 countries, but who would expect to find them in Antarctica?

It is in this remotest continent that USAPHC veterinary food safety officers perform food inspections for the National Science Foundation’s Polar Program and the military personnel assigned to McMurdo Station.

Antarctica is the “est” continent—the highest, driest, coldest, windiest and cleanest continent on earth, according to Gwen Adams, safety and occupational health manager of the National Science Foundation’s Office of Polar Programs.

The Antarctic also is a unique natural laboratory, and scientists live in this environment 12 months of the year. However, most of their food supply must be shipped during the short summer season, usually in January, while shipping lanes are open.

“The annual resupply of the Antarctic stations including McMurdo Station, South Pole Station and remote field camps is an intense 24-hour a day operation that lasts for five to seven days,” said Chief Warrant Officer 5 Christopher Finch, Food Protection Program deputy program manager, who made seven trips to Antarctica. “Food inspections for these locations are performed through an agreement with the NSF to ensure they have independent food inspection.”

But there is more to providing food for the Antarctic stations than a single week of inspections.

Food is inspected and loaded on the U.S. West Coast in late December to be shipped on the annual supply vessel. This shipment provides approximately a 13-month food supply. In addition, air-drops provide routine supplies of fresh foods to McMurdo Station and the South Pole, according to Warren.

Fresh foods are also shipped from New Zealand during the Antarctic summer from November to March after audits by the regional USAPHC food specialist. Some fresh food is also grown in a hydroponic garden at the pole.

“Foods shipped to Antarctica also have to meet very stringent packaging regulations,” explained Finch. “Due to the extreme temperatures, foods can’t be packed in glass, and packaging has to meet environmental regulations that dictate how much waste the food packaging can produce. Any unused food is shipped back.”

Storage conditions at the pole can be challenging as well. Food shipped to Antarctica is usually six to eight months old and will be stored for as much as a full year before use.

“The extreme temperatures can cause meats and other foods to dehydrate, affecting the quality,” Warren explained. “We check that the maximum shelf life is what was ordered to ensure that the food will retain its quality in this harsh environment.”

When not facing wind-chill temperatures of minus 50 degrees Fahrenheit in Antarctica, McNeil performs audits of local and regional commercial food processing facilities supporting the NSF and U.S. forces worldwide from his location in New Zealand.

“This assignment was a fantastic experience,” said McNeil. “Meeting the unique food inspection challenges at McMurdo and the South Pole stations due to the unusual operational conditions and environment, interacting with the NSF personnel, and exploring the historical sites were opportunities no other job could offer.”

Chief Warrant Officer 5 Christopher Finch performs a food stores inspection at a research camp in Antarctica. (USAPHC photo)
Veterinary food inspector makes the right call

JANE GERVASONI
EDITOR

Veterinary food inspectors look at food shipments destined for consumption by military service members and their families on a regular basis, but sometimes the food inspected has special significance for Soldiers. Such was the case when U.S. Army Public Health Command Staff Sgt. Kimberly Kornacki, deployed with Task Force Medical Falcon, inspected a food shipment containing unidentified brown pellets.

Kornacki, the force health protection team non-commissioned officer-in-charge at Camp Bondsteel in Kosovo, rejected the shipment, which was to be used to prepare the Soldiers’ Thanksgiving dinner.

“I knew there was a problem as soon as I checked the truck with the food shipment and found brown cylindrical pellets on the floor of the vehicle and on top of the food,” explained Kornacki. "Checking for contamination is an important part of the inspection process, and what I saw raised a red flag.”

Food safety regulations used by the Department of Defense instruct inspectors to check delivery trucks and verify that food is protected from contamination during shipment, she explained.

Public Health Command Region–Europe became involved in the shipment because of the working relationship with Lt. Col. Michael LaGodna, command veterinarian in the office of the command surgeon at U.S. Army Europe headquarters. In addition, Lt. Col. Dwayne Bechtol, chief of Food Safety and Quality Assurance at the Defense Logistics Agency Troop Support for Europe and Africa, was involved since he has oversight of all European facilities that ship or produce food product intended for military installations, according to Col. Randall Rietcheck, PHCR–Europe deputy commander.

All confirmed Kornacki’s decision.

“Lt. Col. LaGodna concurred that Staff Sgt. Kornacki had made the right call in rejecting the receipt of the contaminated food shipment,” said Rietcheck “A unified response was then provided to the Camp Bondsteel dining facility manager and the vendor that the U.S. government never accepted delivery of the contaminated product.”

But that left Camp Bondsteel with no special Thanksgiving dinner for their Soldiers.

The veterinary inspectors and DLA worked together to fix that problem quickly. “A replacement food shipment was coordinated and sent to Camp Bondsteel on Friday, Nov. 23, and it was delivered on the following Monday so the Soldiers could enjoy their Thanksgiving meal,” said Rietcheck.

Public Health Command District–Southern Europe inspected the vendor warehouse that had shipped the food products to Camp Bondsteel, and Capt. Hayley Ashbaugh, PHCD–SE and Bechtol conducted the inspection.

“There were no major/critical findings, and we didn’t find a definitive cause” according to Ashbaugh. “We discussed how the pellets might have gotten into the truck with the facility and tried to narrow down the possibilities.”

“The support my force health protection team receives in Kosovo is truly amazing,” said Kornacki. “I am just happy being able to contribute to the mission in Kosovo.”

“This was definitely a collaborative effort,” said Maj Diane Collette, officer-in-charge at Baumholder, Germany, where Kornacki will return as NCOIC after her deployment. “Staff Sgt. Kornacki really did her job, and everyone worked together to accomplish the mission.

“I really miss my awesome NCOIC, and I am very proud of her,” said Collette. ▲

A replacement food shipment was coordinated and sent to Camp Bondsteel ... so the Soldiers could enjoy their Thanksgiving meal.

—Col. Randall Rietcheck
PHCR–Europe
The intentional contamination of the Department of Defense’s food and water supplies could have serious effects on the mission of the U.S. military and on individual service members and their families.

“The primary focus of food defense is the prevention of the intentional contamination of our food supply, while food safety is aimed at preventing unintentional or accidental contamination,” explained Sgt. 1st Class Kevin M. Gill, veterinary food inspection specialist in the Veterinary Services Food Protection Program.

“Since both food safety and food defense deal with the protection of the food supply, it follows that measures for enhancing food safety and food defense often go hand in hand,” Gill said.

“Although food safety had been a mainstay of the mission of Army veterinary food inspectors, food defense had not even been a focus of discussion until after September 11, 2001, said Col. Thomas E. Honadel, Veterinary Services Food Protection Program manager. “Since that time, more emphasis has been placed on antiterrorism food defense plans.”

USAPHC veterinary food inspectors are required to perform annual installation food vulnerability assessments of all Army, Navy and Marine Corps installations, while Air Force personnel perform many of the same functions at their bases.

“Our veterinary food inspectors identify potential weaknesses and ways to reduce, control or eliminate the hazards. They do so in a very uniform and consistent manner, using highly specific written standards,” said Gill.

“These annual assessments are required by DOD and focus on food from its source to entering the gate (at a military post),” said Honadel. “All Army installations must have a food defense assessment team that conducts food vulnerability assessments and crafts a regularly updated food defense plan.”

A food defense team consists primarily of USAPHC veterinary food inspection specialists (68R), a Veterinary Corps officer and preventive medicine personnel. The team may also include the Defense Commissary Agency; Morale, Welfare and Recreation; Army and Air Force Exchange Service; local criminal investigation; security; and antiterrorism personnel.

“Our food inspectors, as the primary part of the food defense assessment team, use checklists to target areas of concern and point out common-sense, low-cost solutions to possible areas of vulnerability,” said Gill.

“Food defense measures include training for food service personnel, increased physical security of food service areas and even background and identification checks,” he said.

Additionally, special events require even more scrutiny. These events are defined in a DOD Instruction as any activity characterized by a large concentration of personnel and/or a gathering where distinguished visitors are involved, often associated with a unique or symbolic event.

“Special events, such as presidential inaugurations, offer opportunities to assess possible food vulnerabilities,” according to Gill. “The USAPHC veterinary food inspectors support these events that are often open to the general public and located outside of military installations.”

During special events, teams of veterinary food inspectors and preventive medicine personnel are assembled at the local USAPHC regional commands. The teams then deploy to provide pre-assessment surveys aimed at reducing the vulnerability of food and beverage service to intentional contamination or disruption by terrorists or criminals.

Awareness of food supplies and food deliveries as well as potential contamination during food preparation highlights the need for enhanced force protection measures, according to Honadel.

These vitally important measures are accomplished, in part, by a technically trained group of Army veterinary service personnel mostly working behind the scenes and unnoticed by many—the USAPHC veterinary food inspection specialists and Veterinary Corps officers.
Art Lundquist, Drinking Water and Sanitation Program environmental engineer, tests individual water purifiers to determine whether they meet Army requirements.

In the U.S. we take safe drinking water for granted.
Our warfighters do not have this luxury when they are on the battlefield.

The U.S. Army Public Health Command has been working across services to address the need for water production and quality surveillance at remote, austere locations, according to Art Lundquist, an environmental engineer in the Drinking Water and Sanitation Program. “We have been supporting the acquisition communities since 2005 through the research, development, testing and evaluation phases to ensure the end products are protective of warfighter health,” he said.

At large bases, bulk water production is managed by military occupational specialty-trained personnel operating complex water treatment systems. Smaller, remote bases often do not have the personnel to staff these production facilities, nor do they need potable water in the large quantities supplied by this equipment.

“The current solution to ensure military personnel have clean, safe drinking water often involves transporting bulk and bottled water to remote bases in deployed locations,” explained Lundquist.

This option has disadvantages with regards to packaging, transport, time, personnel and force protection. However, there are other options for providing safe drinking water in austere, remote environments.

“The U.S. military lacks a materiel solution for producing water at the unit level; however the commercial market offers numerous options that purport to fill this gap,” Lundquist said. “The services are evaluating commercial products and developing requirements to feed into a future program for fielding new equipment.”

In the meantime, individual water purifiers are an option that helps ensure Soldiers on missions have safe water to drink.

“For individual warfighter use during emergencies, or while on short-term planned missions, the Army has an established program and is evaluating individual water purifiers that are designed to work with personal hydration systems,” said Lundquist.

Drinking Water and Sanitation Program personnel have been working with Jeffrey Dunn, a project engineer from the Natick (Mass.) Soldier Research Development and Engineering and the Aberdeen Test Center at Aberdeen Proving Ground, Md., to test the performance of individual water purifiers, according Lundquist.

Lundquist said ATC tested the devices for their ability to withstand exposure to environmental conditions such as freezing and thawing, vibration, compression and shock. The ATC pass/fail standard for these tests was based on visual inspection of the devices—were they damaged or broken?

The DWSP then used an evaluation process developed in the program to determine if the devices were still able to provide safe drinking water after being subjected to the physical and environmental stressors.

“We pumped contaminated water through each candidate filter then analyzed the water to see if coliform and Escherichia coli bacteria from the contaminated water had been filtered out,” explained Lundquist. “The data was then provided to ATC to document water purifier performance and to assist decision-makers in determining if the candidates meet Army requirements.”

The DWSP evaluation provided a cost-effective means to document the integrity of the filter after the environmental testing. DWSP will continue to provide technical support to acquisition programs targeting safe water production in remote environments to help protect the health of warfighters.
If you have ever ridden in a military helicopter, you have felt the vibration that seems to shake your whole body during even a short trip. What happens to the aircrew and passengers who are exposed to prolonged and repeated whole-body vibration? The Ergonomics Program studied this question when asked to collect vibration data on the UH-60 M Blackhawk and the UH-72A Lakota helicopters by the Vermont Army National Guard.

Coordinating the requirements to conduct the study took more than eight months and mountains of paperwork. While the data from the study hasn’t been completely analyzed yet, it ultimately will allow researchers to assess whether there are health impacts to aircrews and how to reduce those impacts. As well, this project is attempting to jump-start a program that will ultimately collect vibration measurements from all military rotary wing aircraft that other researchers, laboratories and equipment designers can use, according to ergonomicist Steven Chervak.

"Before we could even begin collecting data, we had to demonstrate the air-worthiness of our equipment. We had to prove that the testing equipment would not adversely affect either the aircraft or the crew," said Chervak. Team members demonstrated how the equipment would be attached to both the helicopter and the members of the aircrew to measure vibration at the seat and on the helmet without interfering with safety of the crew or passengers.

"Ken Forsythe, an industrial hygienist with the Maryland ARNG, wanted us to target musculoskeletal pain, including low back pain, and discomfort reported by members of aircrews," according to Chervak. "We installed equipment to measure vibration and flew on the helicopters to observe posture changes among crew members in flight. We also looked at how their postures changed during day and night missions because of flight conditions and additional equipment such as night vision goggles."

Concern about musculoskeletal pain and discomfort is not new among military flight crews. Navy aviation reports have indicated that back pain can even affect situational awareness in pilots and crew members. Suzanne Smith, senior biomedical engineer with the Air Force Research Laboratory, directed the vibration data acquisition and will continue to work with the U.S. Army Public Health Command to share information and improve aircraft seat properties, explained Chervak.

"The number of hours pilots and aircrew are in the air has increased during deployments, and low back pain can interfere with mission accomplishment. Members of aircrews sit in one position for long periods, which can hinder blood flow, causing additional concerns," according to Chervak.

Vibration doesn’t just affect the aircrews of helicopters. Many patients are transported by helicopter and subjected to vibration as well. Often, patients are not seated, but strapped on stretchers attached directly to the floor of a helicopter. Measuring the vibration they experience can provide information that will lead to better methods of transporting patients.

"The information we are collecting with the help of our partners will provide insight into occupational exposures and provide additional data for research," Chervak explained. "We are hoping to be able to perform additional testing on other types of helicopters and contribute to the redesign of seats and equipment to help eliminate or limit the occupational hazards of flying in helicopters. Information collected in our studies has the potential to affect not only military, but also civilian helicopters that transport patients to hospitals," he said. "This is a great opportunity to demonstrate the importance of ergonomics and to provide a real service in support of our Soldiers."
Over the past three years, the Injury Prevention Program has been analyzing data from parachute jumps conducted by the 82nd Airborne Division, 18th Airborne Corps and 18th Air Support Operations Group, all based at Fort Bragg, N.C.

"On a number of occasions, we traveled to Fort Bragg to evaluate jumps and to look at procedures," said Joseph Knapik, a research physiologist who served as the lead scientist for the project.

The results of the study were surprising.

"Overall injury risk was reduced by half with the T-11 parachute compared to the T-10," said Knapik.

In 2010, the Army started using the T-11 Advance Tactical Parachute System for its parachuting Soldiers.

The Army had been using the older, T-10 parachute since 1952.

"This original system was designed to carry a Soldier and his equipment, but that parachute was designed for a maximum load of 330 pounds," said Knapik.
Since the introduction of the T-10, however, the average size of America’s Soldiers and the amount of equipment they are required to carry into battle have both increased—and in parachute operations in Iraq and Afghanistan, average loads were 327 to 380 pounds.

In order to address the shortcomings in the T-10 parachute system, the Army developed the T-11 system, which is designed to hold 400 pounds.

The Army, however, still wanted a formal study that compared injury rates between the two parachute systems. "Parachuting injuries are the sixth leading cause of hospitalization in active-duty Soldiers," said Bruce Jones, physician and Injury Prevention Program manager. "Eighty percent of these injuries result in a need for medical evacuation, so we are greatly concerned with ways to reduce these injuries in our Army population."

On average, there was a risk of nine injuries per 1,000 jumps when using the T-11 parachutes, with 14,000 systems already in place at Fort Bragg, and phasing out the T-10 parachutes, according to Army researchers.

Although more study is necessary, USAPHC scientists said they are pleased to work on a project that identifies how to reduce injuries in the Army population. "It’s rewarding to see that we are providing the science behind the Army’s transition to the new parachutes," said Ryan Steelman, Injury Prevention Program epidemiologist, who was also a key contributor to the study. "The most enjoyable aspect of doing my job is helping Soldiers stay injury-free and combat-ready."

Knapik has many hypotheses on why the T-11 parachutes resulted in lower injury risks to Soldiers. "Because of its shape (modified cruciform), the T-11 parachute becomes vertically stable very soon after deployment and does not oscillate like the T-10," said Knapik. "Oscillations can increase injury risk by increasing the impact energy on ground contact."

Additionally, the new parachutes offer other safeguards. "The T-11 parachute incorporates changes in the descent rate, which reduce ground impact energy," said Knapik.

The Army is increasing its production of the T-11 parachutes, with 14,000 systems already in place at Fort Bragg, and phasing out the T-10 parachutes, according to Army researchers.

"Our nation is fortunate to have such dedicated service members as Ed Garcia," Koutz said. "For both his service to America and his community, Sgt. Garcia is a credit to dedicated service members as Ed Garcia," Koutz said. "For both his service to America and his community, Sgt. Garcia is a credit to our country."
As she embarked on her journey to complete a 12-kilometer road march across rough terrain in less than two hours while carrying a 33-pound rucksack, Pfc. Michelle Knevitt couldn’t help but wonder what she had gotten herself into.

“I was so exhausted, and I felt that I just couldn’t make it,” said Knevitt, a preventive medicine specialist at the U.S. Army Public Health Command headquarters. But her battle buddies wouldn’t let her quit.

“She was just a few miles shy of the finish line, and we knew that she could do it,” said then- USAPHC headquarters 1st Sgt. John Castillo.

The support and motivation of her team members helped propel Knevitt forward. “If it wasn’t for my fellow Soldiers, I would have given up,” said Knevitt. “I had to use every ounce of energy and muscle I had to make it through the final stretch.”

Knevitt’s hard work and determination paid off Sept. 26, when she became one of 11 Soldiers from the USAPHC to earn the German Armed Forces Proficiency Badge, after completing a grueling competition held in Reston, Va.

Introduced in the 1970s, the GAFPB competition recognizes and rewards those Soldiers in the German Armed Forces who possess superior physical abilities. U.S. military service members may also compete for the distinguished badge.

An extremely strenuous competition, the GAFPB challenges even the most physically fit Soldiers. The participants compete in several categories, including first aid testing, CBRN (chemical, biological, radiological, nuclear) testing, a German military basic fitness test, swimming, marksmanship and a road march. Each participant must pass all events in order to be awarded the badge.

Many of the USAPHC Soldiers who participated in the event said that completing the swimming event was the most difficult part of the competition. “As U.S. Army Soldiers, we are used to running and we are used to doing push-ups, but we are not used to timed swimming events,” Castillo explained.

According to the rules of the competition, Soldiers had to swim 100 meters in less than four minutes, while wearing their full Army Combat Uniform, minus the socks and boots. Once they completed the timed swim, Soldiers had to remove their ACU top and bottom while treading water.

“I consider myself a decent swimmer, but the first time that I hit the water with the uniform, it was a rude awakening,” said Castillo. “It was extremely difficult to complete this part of the competition because the weight of the ACUs really dragged you down.”

Fortunately participants could attempt this feat multiple times. “It took me four tries to pass this portion,” said Castillo, who eventually earned the gold badge. “The key to success is staying focused and determined, despite the obstacles that come your way.”

Another challenging aspect of the competition was the flexed arm hang, which required Soldiers to hold onto a horizontal bar while suspended in the air for as long as they could, while never allowing their chin to fall below the bar. To earn top honors, USAPHC team members had to hang on for at least 46–65 seconds, depending on age and gender.

Capt. Erika Huerta, aide-de-camp to the USAPHC commanding general and gold badge winner, exceeded these standards and held on for 82 seconds, longer than any other USAPHC team member. Now that the competition is over, USAPHC team members are relieved and proud of their accomplishments. In addition to earning the right to wear this distinguished badge on their service uniforms, they were presented with the newly developed “Sienko Silver” award from USAPHC Commanding General Maj. Gen. Dean G. Sienko. Sienko Silver is a time-off award presented to military and civilian employees to reward and show appreciation to those in the organization who exceed standards of excellence.

German Armed Forces Proficiency Badge